

MATERNAL & CHILD HEALTH:

Problems of Women

Diseases of Infants and Children

Child Spacing





THE MEDEX PRIMARY HEALTH CARE SERIES

After completion of extensive field trials in Micronesia and in primary health care programs in Lesotho, Guyana, Pakistan, and Thailand, the methods and materials of the MEDEX technology have been published as The MEDEX Primary Health Care Series. The Series provides a systematic, practical, adaptable format for management and training in new or existing primary health care programs at all levels.

The 35-volume Series is organized into three major categories of Management Systems Development

Materials, Mid-Level Health Worker Training Materials, and Community Health Worker Training Materials. The Series is appropriately balanced between promotive, preventive, and curative needs in primary health care.

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PROBLEMS OF WOMEN

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The MEDEX Primary Health Care Series

COMMUNITY HEALTH CELL

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PROBLEMS OF WOMEN

Student Text

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FUNDED BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT CONTRACT NO. DSPE-C-0006. The views and interpretations expressed are those of the Health Manpower Development Staff and are not necessarily those of the United States Agency for International Development.

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TASK ANALYSIS TABLE

Diagnosing, treating, and preventing problems of women.

Training Requirements		KNOWLEDGE
Work Requirements	SKILLS	
The MLHW will: 1. Take and record a medical history of each woman presenting with reproductive system problems	The MLHW trainee will show that he is able to: 1.1 Record a woman's presenting complaint	The MLHW trainee will show that he knows:
	1.2 Question a woman about her reproductive system problem	1.2.1 How to question a woman about her reproductive system problem 1.2.2 Information needed to complete the medical history of a woman's reproductive system problem: Recent abortion Foul smelling discharge from the vagina Watery or pink discharge from the vagina White, yellow, green, or red discharge from the vagina Itching around the vagina Burning pain during urination Bleeding after menopause Bleeding between menstrual periods

<div>Work Requirements</div> <div>DUTIES</div>	<div>Training Requirements</div> <div>SKILLS</div>	<div>KNOWLEDGE</div>
<div>2. Perform a physical examination on all women presenting with reproductive system problems</div>	<div>1.3 Record a woman's medical history</div> <div>2.1 Identify these signs of a woman's reproductive system problem:</div> <div>Fever</div> <div>Tenderness in the lower abdomen with guarding</div> <div>Rebound tenderness</div> <div>Foul smelling discharge from the vagina</div> <div>White, yellow, or yellow-green discharge from the vagina</div>	<div>Breast lump</div> <div>Burning pain during sexual intercourse</div> <div>Suddenly feeling very hot</div> <div>Heavy bleeding during menstruation</div> <div>Irregular and scanty menstruation</div> <div>Weight gain</div> <div>Nausea and vomiting</div> <div>Dull, cramping pain during menstruation</div> <div>Backache</div> <div>1.3.1 How to use medical history forms</div> <div>2.1.1 The anatomy and physiology of the female reproductive system</div>

<div>Work Requirements</div> <div>DUTIES</div>	<div>Training Requirements</div> <div>SKILLS</div> <div>KNOWLEDGE</div>
	<div> Pussy discharge from the vagina Frothy discharge from the vagina Tenderness when the uterus is moved Inflammation of the external genitals Inflammation of the walls of the vagina Inflammation of the cervix Tender mass in the areas on either side of the uterus Mass in the uterus Breast lump Breast lump attached to the skin or the wall of the chest Discharge from the nipple Abnormal shape or color of the nipple Enlarged lymph glands in the underarms Smooth and pale walls of the vagina Anemia Bleeding from the vagina Infection of a wound </div>

<div>Work Requirements</div> <div>DUTIES</div>	<div>Training Requirements</div> <div>SKILLS</div> <div>KNOWLEDGE</div>
<div>3. Diagnose these problems of women:</div> <div> <div>Pelvic inflammatory disease</div> <div>Non-specific vaginitis</div> <div>Trichomonal vaginitis</div> <div>Monilial vaginitis</div> <div>Cancer of the uterus or cervix</div> <div>Fibroid tumor in the uterus</div> <div>Tumor of the ovary</div> <div>Breast lumps</div> <div>Menstrual cramps</div> <div>Side effects of contraceptives</div> <div>Menopause</div> <div>Atrophic vaginitis</div> </div>	<div> <div>2.1.2 The definition of common physical signs associated with women's reproductive system problems</div> <div>2.2.1 How to use forms for writing down the findings of a physical examination</div> <div>3.1.1 The clinical picture of women's problems and the course and complications of these problems</div> </div> <div> <div>2.2 Perform a physical examination, including pelvic and breast examinations, for a woman with a reproductive system problem. Record the findings</div> <div>3.1 Use the Student Text and Diagnostic Guides to identify problems of women</div> </div>

Work Requirements	Training Requirements	
DUTIES	SKILLS	KNOWLEDGE
4. Treat and care for women with reproductive system problems	4.1 Use the Student Text, the Formulary, Patient Care Procedures, and the Patient Care Guides to treat women with reproductive system problems	4.1.1 Where to find reference manuals and how to use them
4.2 Decide how to treat a woman with a reproductive system problem		4.2.1 The correct medical treatment for each of the reproductive system problems of women
		4.2.2 The properties of drugs and medicines used to treat women's reproductive system problems
		4.2.3 The side effects and contraindications of drugs used to treat women's reproductive system problems
5. Share with women ideas on how to prevent and care for reproductive system problems	5.1 Counsel women about home care and prevention of reproductive system problems	5.1.1 Recommended home care procedures
5.2 Teach women to examine their own breasts		5.1.2 The prescribed drugs and dosages for each of the reproductive system problems of women

<p>Work Requirements</p> <p>DUTIES</p>	<p>Training Requirements</p>	
	<p>SKILLS</p>	<p>KNOWLEDGE</p>
<p>6. Give health workers, patients, families, and others advice on how to care for and prevent women's reproductive system problems</p>	<p>6.1 Tell a woman's family and community groups about reproductive system problems and how to prevent them</p> <p>6.2 Teach community health workers about women's reproductive system problems</p>	<p>5.1.3 How to prevent women's reproductive system problems</p> <p>5.2.1 The procedure women should use to examine their own breasts</p> <p>6.1.1 How to tell groups of women about the care and prevention of women's reproductive system problems</p> <p>6.2.1 The content of the community health worker module</p>

SCHEDULE

Problems of Women

DAY 1	DAY 2	DAY 3	DAY 4
<p>Introduction to Problems of Women module</p> <p>Assessing a woman with a reproductive system problem</p>	<p>Diagnosing common infections of the female reproductive system and caring for patients</p> <p>Pelvic inflammatory disease</p> <p>Non-specific vaginitis</p> <p>Trichomonal vaginitis</p> <p>Monilial vaginitis</p>	<p>Educating women about examining their breasts</p>	<p>Assessing women with problems; Clinical practice</p> <p>Group A - Interviewing, examining, and caring for women</p> <p>Group B - Presenting health messages</p>
	<p>Diagnosing tumors of the female reproductive system</p> <p>Cancer of the uterus or cervix</p> <p>Fibroid tumor in the uterus</p> <p>Tumor of the ovary</p> <p>Breast lumps</p>	<p>Diagnosing menstrual cramps, the side effects of contraceptives, menopause, and atrophic vaginitis</p>	

DAY 5	DAY 6		
<p>Assessing women with reproductive system problems; Clinical practice</p> <p>Group A - Presenting health messages</p> <p>Group B - Interviewing, examining, and caring for women</p>	<p>Posttest</p>		

Skill development: one week
 Clinical rotation: one month
 Community phase: three months

Introduction

You already have studied the Anatomy and Physiology, Medical History, and Physical Examination modules. What you learned in these clinical knowledge and skills modules has prepared you for the study of women's reproductive system problems. So before you start this module, be sure you know:

- The normal anatomy and physiology of the female reproductive system
- How to take a medical history
- How to perform a physical examination
- How to present health messages

If you are not sure how well you know this information or can do these procedures, review the clinical knowledge and skills modules before you go on.

LEARNING ACTIVITIES

Activities in this module will help you learn how to properly diagnose and care for women's reproductive problems. These activities will take place in the classroom and in a hospital clinic or health center.

Your schedule shows you when the learning activities will occur. Student Guides in front of each unit tell you more about what you will be expected to do. The units will be taught in order, from Unit 1 to Unit 5. Your instructor will make special arrangements for Units 6, 7, and 8 which will take place in a clinic and a community.

This training program can succeed only if you take an active part. Prepare for each session. Before each session:

- Read the Student Text and answer the review questions that go with it
- Read the Patient Care Guides and learn about the drugs you will be using
- Read the Diagnostic Guides and compare the content to the disease discussions in your module
- Write down questions to ask your teacher about any part of the lesson you do not understand

In class, the teacher will answer the review questions and any other questions you have.

EVALUATION

This training program will help you build your knowledge and skills. Regular evaluations will allow your teacher to watch your progress. If your progress does not meet the standard, you will be given more time to learn the subject. Your instructor will use the clinical and community performance records to measure your progress. Look at these performance records to measure your progress. Look at these performance records to prepare for your evaluations.

EVALUATION Level I

After five days of classroom and clinical experiences related to problems of women, you must be able to pass a written test of knowledge with a score of 80% or higher.

After another week of clinical experience, you must receive two Satisfactory ratings on your ability to:

- Recognize the abnormal physical signs of women's reproductive system problems

- Interview women about their problems

- Perform pelvic and breast examinations

- Advise women about the prevention and care of reproductive system problems

- Present health messages about how women should examine their breasts

EVALUATION Level II

You will have one month of clinical practice. To satisfy the requirements of this clinical evaluation, you must correctly diagnose, treat, and advise two patients for each of these problems:

- Pelvic inflammatory disease

- Non-specific vaginitis

- Trichomonal vaginitis

- Monilial vaginitis

- Cancer of the uterus or cervix

- Fibroid tumor in the uterus

Tumor of the ovary
Breast lumps
Menstrual cramps
Side effects of contraceptives
Menopause
Atrophic vaginitis

EVALUATION Level III

During the three-month community phase of your training, a supervisor will observe your performance and rate your skill in:

Diagnosis and treatment of each of the reproductive system problems of women

Advising women about how to examine their own breasts, how to prevent the spread of problems of the reproductive system, and how to care for problems of their reproductive system

Training a community health worker to assist with the community health program

Your clinical and community performance records list the number of acceptable ratings you must earn for each activity.

Unit 1

Assessing a Woman with a Reproductive System Problem

STUDENT GUIDE

OBJECTIVES

1. Recognize and describe these signs of women's reproductive system problems:

Fever

Tenderness in the lower abdomen with guarding

Rebound tenderness

Foul smelling discharge from the vagina

White, yellow, or yellow-green discharge from the vagina

Pussy discharge from the vagina

Frothy discharge from the vagina

Tenderness when the uterus is moved

Inflammation of the external genitals

Inflammation of the walls of the vagina

Inflammation of the cervix

Tender mass in the areas on either side of the uterus

Mass in the uterus

Breast lump

Breast lump attached to the skin or the wall of the chest

Discharge from the nipple

Abnormal shape or color of the nipple

Enlarged lymph glands in the underarms

Smooth and pale walls of the vagina

Anemia

Bleeding from the vagina

Infection of a wound

2. Interview a woman about her reproductive system problem.
3. Examine a woman with a reproductive system problem and perform a pelvic examination and breast examination.
4. Correctly record your findings on official forms.

LEARNING ACTIVITIES

1. Join in a review of the Task Analysis Table that describes your work in caring for women with reproductive system problems.
2. Read the parts of the Physical Examination module that describe how to perform a pelvic examination and how to examine a woman's breasts. Answer the review questions for each part.
3. Join a review and discussion of the female reproductive system.
4. Join the teacher and class in discussions about the signs of women's reproductive system problems.
5. Observe the instructor during an interview of a woman with a reproductive system problem.
6. Observe the instructor demonstrate the breast and pelvic examinations for women.
7. Practice how to take a medical history and perform a physical examination of women with reproductive system complaints.

1.1 SIGNS OF A WOMAN'S REPRODUCTIVE SYSTEM PROBLEMS

Learn about the abnormal physical signs of women's reproductive system problems. These signs will help you locate and recognize a woman's problem.

Discharge from the Vagina

Discharge from a vagina will vary in color, texture, and smell, depending on its cause. The discharge may be clear, white, yellow, yellow-green, or pink. It may have a trace of blood. The texture of discharge varies from thin and watery to thick and curd-like. The discharge may have a smell of fruit, or it may smell foul. Describe the color, texture, and smell of discharge from a woman's vagina.

Bleeding from the Vagina

Describe any bleeding from a woman's vagina. Note whether the blood is bright red, dark red, or brown. Also record the amount of blood you find, whether you see much bleeding or very little.

Problems Involving the Cervix

As part of a pelvic examination, you will inspect the cervix. The cervix is the neck, or front part, of the uterus. The cervix of a healthy woman who is not pregnant looks pink, smooth, and firm. The opening through the cervix to the uterus normally is closed.

Pregnancy and disease, however, change the shape, color, and feel of the cervix.

Pregnancy changes the color of the cervix to blue-pink. Pregnancy also softens the feel of the cervix, but its surface remains smooth. Delivery of a child causes lasting changes to the cervix. The size of the opening of the cervix increases, though it should remain closed. Delivery of a child may tear the opening of the cervix. The opening of a torn cervix will look irregular after it heals.

Swelling and tumors change the shape of the cervix. Inflammation will redden the cervix and cause a discharge. Also, the lining of the uterus may reach outside the cervix causing what looks like ulcers around its opening. This condition is a cervical erosion.

Problems Involving the Vagina

You will examine the walls of a woman's vagina during a pelvic examination. The walls of the vagina normally look dark pink and wrinkled. Note any abnormal conditions such as pale walls, inflammation, discharge, or bleeding.

Problems Involving the Uterus

The uterus of a healthy woman who is not pregnant will be in the center of the pelvic area. You will palpate the uterus as part of the pelvic examination. The uterus will normally be even and rounded, about 7.3 cm long and 4.8 cm wide. The uterus normally will move freely without causing any pain.

Note any tenderness when you move the uterus. Note any lump or mass when you palpate it.

Problems Involving Either Side of the Uterus

The areas on either side of the uterus, or the adnexal areas, contain the ovaries and fallopian tubes. Note any tenderness, swelling, or mass in these areas. Compare the temperatures on either side of the uterus. Note which side feels warmer.

Problems Involving the Breasts

You will examine a woman's breasts as part of a physical examination, and you will show women how to examine their own breasts. Look for any abnormal shape, color, or discharge.

Examine the shape of the nipples. Do they turn inward? Examine the skin for cracks. Note any discharge.

When you examine a woman's breasts, you will look and feel for any hard lumps or swelling. Note whether any lumps or swellings are tender, warm, or red.

1.2 TAKING THE MEDICAL HISTORY OF A WOMAN'S REPRODUCTIVE SYSTEM PROBLEMS

When a woman comes to you with a problem of her reproductive organs, ask these questions.

“When Was Your Last Menstruation? Was It a Normal Menstrual Period?”

Many problems of women have an effect on the menstrual period. Record the date, the length of flow, the amount of flow, and whether the flow has come at regular monthly intervals.

“Are You Pregnant Now? When Was Your Last Pregnancy?”

Pregnancy changes the anatomy and physiology of women. Some problems only occur during pregnancy.

“What Treatment Have You Taken for Your Problem?”

Previous treatment may change the signs you will find. Some previous treatments may have made the problem worse.

1.3 PERFORMING A PHYSICAL EXAMINATION FOR PROBLEMS OF WOMEN

Certain signs that you find during a physical examination will help you diagnose your patient's problem

Compare Both Breasts

Look for differences in the nipple and skin. Look for unequal size or irregular shape of the breasts and nipples. Look for redness and other differences in color. Examine the breasts while the woman is seated with her hands first at her side, then on her hips, and then over her head.

Feel the Breasts

Perform a standard breast examination by palpating both breasts and underarm areas. Feel, also, for any change in temperature. Inflammation may cause redness and heat.

Locate the Problem

Ask the woman to show you where she has the problem. Examine that area again.

If the patient's problem is in her genital area or lower abdominal area, you must perform a pelvic examination.

Examine the Genitals

First examine the genital area. Examine the clitoris, labia, urethra, rectum, and skin. Look for any discharge or bleeding from the vagina, urethra, or rectum.

Swelling or redness are usually signs of inflammation or infection. Note any lumps, redness, paleness, discharge, or bleeding.

Palpate the Pelvic Areas

Palpate any external lump, swelling, or growth that you see during a pelvic examination. Also palpate the genital organs that you cannot see. You will use two hands, one with two fingers inside the vagina and the other on the abdomen, to feel the internal organs.

Feel the size and shape of the uterus and ovaries. Note any tenderness, lumps, or swelling.

Look for Signs of Inflammation

The most important sign of pelvic inflammation may be tenderness. Examine gently and learn how a woman reacts to a gentle but thorough examination. You may be able to decide whether tenderness means inflammation if you know how women normally react to palpation of the genital organs.

Smell is another sign of inflammation in the pelvic area. Learn to recognize differences in smell caused by discharge. Pus is always a sign of inflammation and infection.

Warmth in one area of the pelvis may mean infection, especially when other signs of infection are present.

REVIEW QUESTIONS

Assessing a Woman with a Reproductive System Problem

1. A discharge from the vagina is a common sign of a problem of the reproductive system. What information about a vaginal discharge should you note and record when taking a medical history and performing a physical examination?
2. When recording information about bleeding from the vagina, what information should you note?
3. Describe the normal appearance of the cervix.
4. A pelvic examination includes palpation of the areas on either side of the uterus. What abnormal signs should you look for during this part of the examination?
5. What information should you record if you discover a breast lump during an examination?
6. What questions would you ask a woman who tells you she has a "woman's problem?"

SKILL CHECKLIST

Examining a Woman's Breasts

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students examine a woman's breasts.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When examining a woman's breasts, you should:

YES NO RATING COMMENTS

1. Gather a good light, a folded towel or flat pillow, and use an examining table or bed				
2. Prepare the woman for the examination. Explain what you will do. Ask her to undress to her waist				
3. Ask the woman to sit first with her arms at her side, then with her hands on her hips, and then with arms raised. Examine her breasts in each position				
4. Ask the woman to lie on her back. Examine and palpate her breasts. Raise her arms over her head. Examine her nipples. Palpate each breast. Lower her arms to her side. Palpate her underarms				

	YES	NO	RATING	COMMENTS
5. Show the woman how to examine her own breasts				
6. Explain your findings				
7. Record the findings of your examination				

SKILL CHECKLIST

Performing a Pelvic Examination

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students perform a pelvic examination.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When performing a pelvic examination, you should:

YES NO RATING COMMENTS

1. Gather a good light, a clean speculum, surgical gloves, lubricant jelly, sheet, and use an examining bed or table				
2. Explain the examination to your patient				
3. Ask the woman to pass urine to empty her bladder				
4. Ask the woman to undress below her waist				
5. Ask the woman to lie on her back on the examination table with her legs apart and her knees bent. Cover her with a sheet				
6. Wash your hands and put on clean surgical gloves				

	YES	NO	RATING	COMMENTS
7. Tell the woman what you are going to do before you start any part of the procedure. Ask her to tell you if she becomes uncomfortable				
8. Spread the lips of the patient's vagina with your left hand. Look for any discharge, blood, cuts, or swelling				
9. Warm the speculum to body temperature. Lubricate the speculum. Gently insert it sideways into the vagina, turn it, then open it				
10. Arrange the light so you can see the cervix				
11. Examine the cervix. Look for any discharge, redness, scars, abnormal color, bleeding. Look for the strings of a contraceptive device				
12. Examine the walls of the vagina for abnormal color or swelling				
13. Gently close the speculum and remove it				
14. Put lubricant jelly on the index and middle fingers of your right hand				
15. Insert those fingers into the vagina until you can feel the cervix				
16. Put your left hand on the abdomen. Locate the uterus between your fingers inside the vagina and your left hand on the abdomen				

YES NO RATING COMMENTS

17. Gently move the uterus from side to side. Ask the patient whether she feels any pain				
18. Move the fingers inside the woman's vagina to either side of the cervix to feel areas near the ovaries and fallopian tubes. Gently remove your fingers from the vagina				
19. Tell the woman that she may dress				
20. Write down what you have found				
21. Talk with the woman about your findings				

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Unit 2

Common Infections of the Female Reproductive System

STUDENT GUIDE

OBJECTIVES

1. Recognize and describe these signs and symptoms of pelvic inflammatory disease, non-specific vaginitis, trichomonal vaginitis, and monilial vaginitis:
 - Fever
 - Tenderness in the lower abdomen with guarding
 - Rebound tenderness
 - Foul smelling discharge from the vagina
 - White, yellow, or yellow-green discharge from the vagina
 - Pussy discharge from the vagina
 - Frothy discharge from the vagina
 - Tenderness when the uterus is moved
 - Tender mass in the areas on either side of the uterus
 - Inflammation of the external genitals
 - Inflammation of the walls of the vagina
 - Inflammation of the cervix
 - Itching around the vagina
 - Burning pain during urination
2. Describe how a pelvic abscess occurs and scars the fallopian tubes.
3. Interview and examine patients to identify the signs and symptoms of pelvic inflammatory disease, non-specific vaginitis, trichomonal vaginitis, and monilial vaginitis.
4. Describe how to treat and care for women with infections in their reproductive organs.
5. Tell patients and their families how to care for infections of reproductive organs at home.

LEARNING ACTIVITIES

1. Join the teacher and class in a review of pelvic inflammatory disease, non-specific vaginitis, trichomonal vaginitis, and monilial vaginitis.
2. Use case studies 50, 51, 52, 53, and 54 to practice collecting and recording medical history and physical examination findings.
3. Write patient care recommendations using the Diagnostic and Patient Care Guides and the Formulary for reference.
4. During skill development in a clinic, observe and practice how to interview, examine, and care for women with infections of their reproductive systems.

2.1 PELVIC INFLAMMATORY DISEASE

Pelvic inflammatory disease infects the vagina, cervix, uterus, fallopian tubes, and the surrounding areas. Gonococcal bacteria often cause the infection. The bacteria enter the body through the vagina and spread through the genital area. The infection may spread into the abdominal cavity.

The bacteria can enter the vagina during sexual intercourse with an infected person, during an abortion, or during delivery of a child. Pelvic inflammatory disease can occur in women who have an intrauterine device (IUD) in place.

CLINICAL PICTURE

a. Presenting complaint

The woman comes to the clinic with *pain in her lower abdomen, fever, and sometimes chills.*

b. Medical history

The woman will tell you that her lower abdomen began to feel uncomfortable a few days earlier. The feeling turned to pain which grew worse. She will have a rising fever and nausea. She will vomit, but should be able to keep some food in her stomach. Her stool will be normal. She already may have started to feel chills.

She may tell you she had a *long and heavy menstruation* that has not stopped. She may have had a recent abortion. Always suspect a pelvic inflammatory disease with a history of a recent abortion.

Ask about discharge. The woman may have noted a *foul smelling discharge* from her *vagina* during the past week.

Ask the woman whether her sexual partner has had a discharge from his penis. A discharge from her partner's penis would indicate gonococcal pelvic inflammatory disease.

c. Physical examination

The patient may have a *temperature higher than 38°C.*

Examine the woman's abdomen. She may have *tenderness* in the lower abdomen with *guarding*. Check for rebound tenderness on both sides.

Examine the pelvic area. Look for a foul smelling discharge or *pus* in the *vagina*. Note any *tenderness* when you *move* the *cervix*. A *tender mass* may be present on *either side* of the *uterus*. This mass may be an abscess.

COURSE AND COMPLICATIONS

An abscess may form in the fallopian tubes. The abscess may scar the tubes and cause sterility.

The vomiting will become more severe. You may need to refer the patient to a hospital for intravenous fluids and nasogastric suction.

Scarring caused by a severe case of pelvic inflammatory disease may cause a painful lower abdomen. This is chronic pelvic inflammatory disease.

PATIENT CARE

The patient should rest in bed in a semi-seated position. Her knees should be slightly raised to keep her pelvis low and allow the pus to drain.

Give her penicillin IM. Give 1 g probenecid by mouth to increase the potency of the penicillin. Give oral ampicillin. See Patient Care followed by oral ampicillin. See Patient Care Guides.

Do not give the patient fluids if her vomiting is severe. Give the patient 1,000 cc of 5% dextrose in water and 1,000 cc of 5% normal saline IV every twenty-four hours. Refer the patient to a doctor if you do not hear bowel sounds after twenty-four hours.

Start treatment and refer the patient to a hospital if you find an abscess.

PREVENTION

Tell the patient to avoid sexual intercourse with a man who has a discharge from his penis. The discharge may cause pelvic inflammatory disease. Treat the man who has a discharge from his penis.

Condoms help prevent the spread of venereal diseases.

Examine the sexual partners of women with pelvic inflammatory disease. They may have gonorrhea. A person with one venereal disease may also have another. Examine the patient for syphilis. Ask

the patient and her sexual contacts about the symptoms and signs of syphilis. Treat the person with signs of syphilis.

An abortion or delivery of a child with equipment that is not sterile can cause pelvic inflammatory disease. Using sterile equipment will prevent the problem.

2.2 NON-SPECIFIC VAGINITIS

Non-specific vaginitis, an inflammation of the vagina's mucous membrane, is a common problem among women. Symptoms and signs of vaginitis vary with its cause. Bacteria cause the most common type of vaginitis.

CLINICAL PICTURE

a. Presenting complaint

A woman with vaginitis caused by bacteria will complain of having a *discharge* from her *vagina*. The discharge usually causes *itching*.

b. Medical history

The woman usually will tell you that the discharge began two or three days earlier. The amount of discharge will increase. She may have *burning pain* when she *urinates*.

The woman's sexual partner usually will not have any discharge from his penis. *Sexual intercourse* may be very uncomfortable or *painful* for the woman.

c. Physical examination

Perform a pelvic examination. Look for *discharge*, *inflammation* of the *external genitals*, and *inflammation* of the *walls* of the *vagina*. Look behind the cervix for discharge if you do not see any at first. The discharge may be yellow or white. Often the discharge caused by *bacteria* is *thick* and *pussy*.

The external genitals may be red and inflamed. The walls of the vagina may be red, inflamed, and swollen. The vagina may be covered with a pussy discharge.

COURSE AND COMPLICATIONS

All types of vaginitis can affect the cervix. An infection of the cervix, called cervicitis, may occur. An infected cervix will be red, swollen, and covered with discharge.

PATIENT CARE AND PREVENTION

Give a woman with a non-specific vaginitis infection enough sulfa vaginal suppositories for seven days. See Patient Care Guides.

A vaginitis suppository is a form of medicine that will turn to liquid in the vagina. A woman places the suppository into her vagina with her finger. The suppository turns to liquid and spreads over the vagina's walls. The woman should lie down for half an hour after putting the suppository into her vagina. Lying down will help the medicine spread throughout the vagina. Some of the medicine may leak out and stain the woman's clothing when she walks.

Advise the woman to avoid sexual intercourse with any man who has a discharge from his penis unless he uses a condom.

2.3 TRICHOMONAL VAGINITIS

A parasite, trichomonal vaginalis, causes trichomonal vaginitis. A man or woman infected with the parasite can pass it to his or her partner.

CLINICAL PICTURE

a. Presenting complaint

The woman may complain of discharge, a foul smell, and possibly bleeding. She may complain of itching around her vagina.

b. Medical history

Ask the woman how long she has had the discharge. Ask her whether she feels burning pain when she urinates. Ask her whether she has itching at her vagina.

c. Physical examination

Perform a pelvic examination. Look for a *frothy, yellow-green discharge*. The discharge may have a *foul smell*. Examine the

external genitals. Look for signs of inflammation. Examine the walls of the vagina for swelling. Look for bleeding, which occurs in severe cases.

COURSE AND COMPLICATIONS

Trichomonal vaginitis may cause cervicitis, an infection of the cervix.

PATIENT CARE

Treat trichomonal vaginitis with metronidazole tablets. Give the medicine to the woman and her sexual partner. Tell the man and woman to use a condom during sexual intercourse until the disease is fully treated. See Patient Care Guides.

2.4 MONILIAL VAGINITIS

Monilial vaginitis is a yeast infection. This type of infection occurs most often in women who have diabetes or who are taking oral contraceptives.

CLINICAL PICTURE

a. Presenting complaint

The woman will complain of a discharge, burning pain when she urinates, and itching at her vagina.

b. Medical history

Ask the woman whether she has had any history of diabetes and whether she takes any oral contraceptives.

c. Physical examination

Perform a pelvic examination. The external genitals will look red and inflamed. A *thick white, curd-like discharge* will occur. A pale *plaque* will cling in *patches* to the *walls* of the vagina and to the surface of the cervix. *Removing* some of the *plaque* may cause a *slight bloody oozing*.

COURSE AND COMPLICATIONS

Monilial vaginitis may cause cervicitis, an infection of the cervix.

PATIENT CARE AND PREVENTION

Give the woman with monilial vaginitis enough nystatin vaginal suppositories for ten days. See Patient Care Guides. Discuss other means of contraception if the woman is taking oral contraceptives. Treat her for diabetes if that disease has caused her problem.

Examine the woman again in two to three weeks. Refer her to a doctor if her symptoms continue. Refer the woman to a doctor if her symptoms improve but her cervix remains red and inflamed.

Advise the woman not to have sexual intercourse with any man who has a discharge from his penis. Advise her to consider a form of contraception other than an oral contraceptive.

REVIEW QUESTIONS

Common Infections of the Female Reproductive System

1. Pelvic inflammatory disease is an infection of the vagina, cervix, uterus, and fallopian tubes. Explain the usual cause and course of this infection.

2. Pelvic inflammatory disease follows an infection in a woman's vagina. List three findings that will help you decide if a problem is pelvic inflammatory disease.

3. Describe what care you would give a woman who has pelvic inflammatory disease.
 - a. Drug treatment for the infection:

 - b. Treatment for severe vomiting:

 - c. Home care:

4. What are the indications for referral of a patient with pelvic inflammatory disease?

5. What advice would you give a woman with pelvic inflammatory disease to help her prevent another infection?

6. Vaginitis, an infection of the vagina’s mucous membrane, is a common problem of women. List the three types of vaginitis infection and the cause of each infection.

TYPE OF VAGINITIS	CAUSE
a.	
b.	
c.	

7. Describe the discharge found with each type of vaginitis.

TYPE OF VAGINITIS	DISCHARGE
a.	
b.	
c.	

8. Describe the drug treatment for each of the three types of vaginitis.

TYPE OF VAGINITIS	DRUG TREATMENT
a.	
b.	
c.	

9. Explain how you can reduce the chance of a woman developing monilial vaginitis a second time.

10. Monilial vaginitis occurs with greater frequency among women who have another more serious disease. You should check for this disease in women who develop monilial vaginitis. What is this disease?

11. What advice would you give a woman to prevent a repeated infection of trichomonal vaginitis?

12. When should you refer a woman with vaginitis?

13. A woman who is twenty-six years old complains of a discharge from her vagina. She says she delivered a normal baby six months ago. The physical examination reveals:
 - Her temperature is 38.5°C
 - She has lower abdominal tenderness
 - She has a pussy and foul smelling discharge from her vagina
 - Movement of the cervix causes pain.
 What is the likely diagnosis?

REVIEW EXERCISE

--- Case Study 50 ---

Name of Patient: Bailey, Susan
Sex: Female
Date of Birth: 28 November 1959
Date of Visit: 1 April 1982
Vital Signs: Temperature 38.2° C
Pulse 86
Respirations 24
Blood Pressure 100/60
Weight 61.8 kg

Presenting Complaint and Medical History: The patient complains of pain in her abdomen. The pain began three months ago. The pain comes and goes. The pain is on the right side of her lower abdomen. The severity of the pain varies, but sometimes it is severe enough to make her stop working. Tablets prescribed by the doctor usually relieve the pain. The woman also has menstrual cramps. She has been troubled with a vaginal discharge since the pain began. The discharge is thick and white and has a foul smell. Since last week she has been feverish. Her last menstrual period occurred on March 15. It lasted for five days and was normal.
Past medical history: The woman says she had the same problem last year.

Physical Examination: The patient looks healthy. She has a slight fever. Her tongue and tonsils are normal. Her chest and heart sounds are normal. An abdominal examination reveals tenderness on both sides of the lower abdomen but more severe tenderness on the right side. A pelvic examination reveals a creamy vaginal discharge that has a foul smell. Areas on either side of her uterus are tender. Moving the cervix causes tenderness.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 51

Name of Patient: Persaud, Shantie

Sex: Female

Date of Birth: 14 January 1945

Date of Visit: 28 February 1982

Vital Signs: Temperature 36.8° C

Pulse 80

Respirations 20

Blood Pressure 110/70

Weight 55 kg

Presenting Complaint and Medical History: The patient says she has had a yellow-green discharge from her vagina since last week. The amount of discharge is increasing. It has a foul odor. The woman has had pain during intercourse since the discharge began. She also has severe itching around her vagina. She complains of backaches. Her last menstruation began February 20, lasted for four days, and was normal.

Past medical history: The patient has never been ill before. She has had three pregnancies and three normal deliveries.

Physical
Examination:

The woman looks healthy. Her throat and tonsils are normal. Her neck is normal. Her chest and heart sounds are normal. Her abdomen is soft with a slight tenderness in the left lower part. Her abdominal organs are normal. A frothy, yellow-green discharge is visible in the vagina. The discharge has a foul odor. The mucous membrane of her vagina is inflamed.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 52

Name of Patient: Persaud, Betty
Sex: Female
Date of Birth: 19 March 1935
Date of Visit: 20 December 1981

Urine:	Sugar ++	
Vital Signs:	Temperature	37°C
	Pulse	72
	Respirations	22
	Blood Pressure	110/80
	Weight	97 kg

Presenting Complaint and Medical History: This woman complains of a headache she has had for the past three weeks. The headache is not worse, but she wanted her blood pressure checked. Aspirin relieves the headache. She takes aspirin regularly. When she is tired, the headache is worse. She has trouble sleeping. Last week she developed a white discharge from her vagina. She also began to itch around the vagina at the same time. Her appetite is good. She eats a lot. She drinks and smokes on social occasions. Her last menstruation started December 5, lasted for three days, and was normal.

Past medical history: She has been troubled with shortness of breath, cough, and chest pain for two years.

Physical Examination: The woman looks healthy but obese. Her throat and tonsils are normal. Her neck is normal. No lymph glands can be felt in her neck. Her chest and heart sounds are normal. Her abdomen is soft and no enlarged organs can be felt. She has no abdominal tenderness. A pelvic examination reveals an inflamed vaginal wall and a thick white discharge from her vagina.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 53

Name of Patient: Miller, Nan
Sex: Female
Date of Birth: 8 February 1932
Date of Visit: 10 March 1982

Vital Signs: Temperature 37° C
 Pulse 84
 Respirations 18
 Blood Pressure 90/60
 Weight 55 kg

Presenting Complaint and Medical History: The woman has had a discharge from her vagina for one year. The discharge is white and thick. The discharge recently has increased, so she decided to visit the health center. Nothing she does reduces the discharge. The discharge is worse in the morning when she gets out of bed. The discharge has no smell. She has not had any fever. She has had vaginal itching. Her last menstrual period was three years ago.

Physical Examination: The woman looks healthy. She has no swelling in her neck. Her tonsils are normal. Her chest and heart sounds are normal. Her abdomen is soft and non-tender. No enlarged abdominal organs can be felt. A pelvic examination reveals a thick, white discharge. The discharge has no odor. The cervix is normal.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?

3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 54

Name of Patient: O'Neil, Doris

Sex: Female

Date of Birth: 12 May 1945

Date of Visit: 31 January 1982

Vital Signs: Temperature 37° C

Pulse 72

Respirations 20

Blood Pressure 140/90

Weight 71 kg

Presenting Complaint and Medical History: The patient complains of a thick, white discharge from her vagina. The discharge has troubled her for four months. The discharge appeared suddenly and is increasing. She has severe itching around her vagina. The area is sore. Intercourse is painful. Her last menstrual period was January 15. It lasted for four days and was normal. She takes oral contraceptives.

Past medical history: She has been pregnant twice and both children are living. She has never had this problem with discharge before.

Family history: Her mother and father are dead. Her mother had diabetes.

**Physical
Examination:**

The patient looks healthy. Her throat and tonsils are normal. Her neck is normal. Her chest and heart are normal. Her abdomen is soft and non-tender. No enlarged organs can be felt. A pelvic examination reveals a thick, white discharge. The walls of her vagina are red and inflamed. Some white plaque covers the walls of the vagina. When the white plaque is peeled off, the mucous membrane bleeds.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

Unit 3

Tumors of the Female Reproductive System

STUDENT GUIDE

OBJECTIVES

1. Describe the signs and symptoms of:
 - Cancer of the uterus or cervix
 - Fibroid tumor in the uterus
 - Tumor of the ovary
 - Breast lumps
2. Describe the course and complications of cancerous and non-cancerous tumors.
3. Interview and examine patients to identify these signs and symptoms of tumors:
 - Mass in the uterus
 - Discharge with a trace of blood from the vagina
 - Tender mass in the areas on either side of the uterus
 - Bleeding after menopause
 - Bleeding between menstrual periods
 - Breast lump
 - Breast lump attached to the skin or the wall of the chest
 - Discharge from the nipple
 - Abnormal shape or color of the nipple
 - Enlarged lymph glands in the underarms

LEARNING ACTIVITIES

1. Join the teacher and class in discussions to review the text information on tumors that can occur in the female reproductive system.
2. Practice interview and examination procedures in the classroom during role-play of case studies 55, 56, and 59.

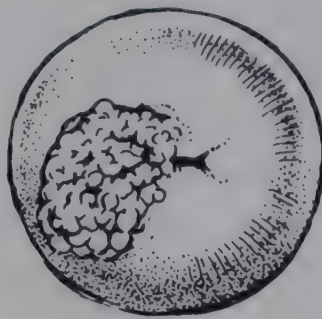
3. Complete medical history and physical examination records during the role-play of case studies 55, 56, and 59.
4. Complete notes on patients with tumors whom you refer to a doctor.
5. During skill development in a clinic, observe and practice how to interview, examine, and care for patients with tumors.

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3.1 CANCER OF THE UTERUS OR CERVIX

A cancerous tumor is the increase and spread of abnormal cells in a person's body. Cancer of the cervix occurs among women of any age. Cancer of the uterus is more common in old women than in young women.



CANCER GROWTH ON CERVIX

CLINICAL PICTURE

a. Presenting complaint

A woman with cancer of the uterus or cervix will often be unaware of any problem. You will find the cancer during a pelvic examination for some other complaint. Check for cancer when a woman complains of a *bloody discharge*, *heaviness* in her *pelvis*, or *irregular bleeding*.

b. Medical history

A *woman past menopause who begins to bleed* may have cancer of the cervix. A woman who bleeds between her regular menstrual period also may have cancer.

Suspect cancer in any *cervical erosion* that does not improve after treatment for vaginitis. Do not expect a history of pain before you suspect cancer. Pain is not a common complaint until the cancer has grown very large.

c. Physical examination

Cancer of the uterus or cervix does not usually have any external signs. You may see a *cervical erosion* or an *enlarged uterus*. Look for any discharge with blood in it. Check for any *mass* in the *areas* on *either side* of the *uterus*.

COURSE AND COMPLICATIONS

As the cancer grows, it will form a large, *irregular mass on the cervix or inside the uterus*. The mass may spread into the bladder or rectum, or attach to the bony walls of the pelvis.

Cancer of the cervix or uterus can cause death unless you find it early and refer the woman for treatment.

A woman with untreated cancer will become very thin and weak. She may develop severe pain and problems passing stool or urine in late stages of the disease.

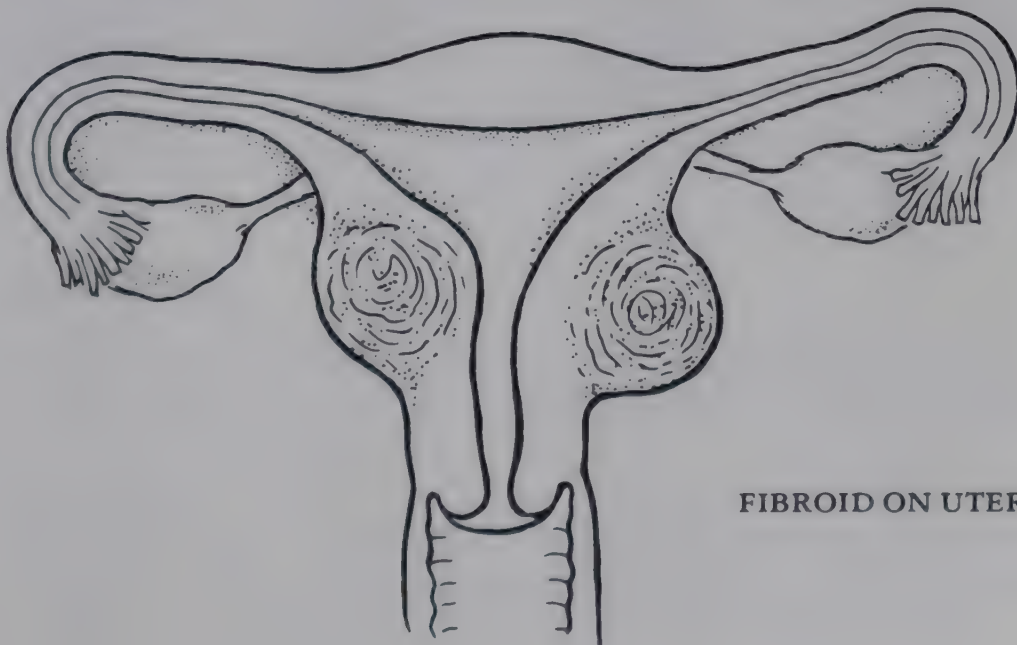
PATIENT CARE AND PREVENTION

Refer the woman to a hospital if you suspect she has cancer. People at the hospital can test for cancer. An operation can prevent a cancer from growing.

You cannot prevent cancer of the cervix or the uterus. Treatment in the early stages of the disease, however, may prevent death.

3.2 FIBROID TUMOR IN THE UTERUS

Fibroid tumors of the uterus are non-cancerous growths. They are usually *smooth, firm, and round*. They may grow anywhere in the uterus. Some fibroid tumors are small, but others grow to be very large. Fibroid tumors are the most common growths in the female genital organs.



FIBROID ON UTERUS

CLINICAL PICTURE

a. Presenting complaint

A woman with a fibroid tumor in her uterus usually has no symptoms or complaints. You will most often find the fibroid tumor during an examination for some other problem.

b. Medical history

A woman with a large fibroid tumor in her uterus may feel a *heaviness* in her *pelvis*. The pressure of the large fibroid tumor may *increase urination* or *constipation*. Fibroid tumors may cause *heavy menstrual bleeding* and *painful menstruation*.

A fibroid tumor that pushes into the center of a pregnant woman's uterus may cause an abortion, difficult labor, or difficult delivery. A fibroid tumor may also cause bleeding after a delivery.

c. Physical examination

You will feel a *smooth, firm, round tumor* during a *pelvic examination*. The fibroid tumor will *move with the uterus* because it is attached.

COURSE AND COMPLICATIONS

Fibroid tumors are not cancerous. They will not spread to other parts of the body. Fibroid tumors can cause problems because they may grow. Small fibroid tumors often cause no symptoms or problems.

PATIENT CARE AND PREVENTION

Refer women who have a tumor in their uterus to a doctor. The doctor will decide whether treatment is needed. You cannot prevent tumors from forming or growing.

3.3 TUMOR OF THE OVARY

A tumor of the ovary will enlarge the ovary. Not all enlargements of the ovaries, however, are tumors. Sometimes, swelling of the cyst that surrounds the egg can enlarge the ovaries. These swellings do not represent a serious problem.

Cancer of the ovary is not common. However, you should refer all patients who have an enlarged ovary to a hospital so the swelling can be checked.



ENLARGED OVARY

CLINICAL PICTURE

a. Presenting complaint

A woman with a large tumor in her ovary may complain of an *enlarged abdomen* and *heaviness* in her *pelvis*. Most often, a woman with a tumor in her ovary will have no complaint. You will find the tumor of the ovary during a pelvic examination for some other problem.

b. Medical history

Usually the woman has had no symptoms. She will have noticed a gradual enlargement of her abdomen if she has a large tumor.

c. Physical examination

You will find a *smooth, movable, non-tender mass* on either side of the uterus during a pelvic examination. A large tumor in the ovary may push against the uterus and other parts of the pelvis.

COURSE AND COMPLICATIONS

Most small swellings in the ovary that are not caused by cancer, such as ovarian cysts, will burst during the menstrual cycle.

Tumors caused by cancer will spread and eventually cause death unless they are removed.

PATIENT CARE AND PREVENTION

Refer all women with tumors in an ovary to a doctor. You cannot prevent a tumor from forming in the ovary.

3.4 BREAST LUMPS

Breast lumps may occur in women of any age. They are usually not cancerous. However, cancer may cause some breast lumps. Breast cancer is the most common cancer of women.

CLINICAL PICTURE

a. Presenting complaint

A woman usually finds a *lump* in her *breast*, and she goes to a clinic to have it checked.

b. Medical history

The woman may have found the lump in her breast while bathing or doing a regular breast examination. The woman may have noticed a *discharge* from her *nipple*.

c. Physical examination

A woman can usually feel a lump in her breast more easily than a doctor or health worker. The lump is *not usually tender*. Some women may have fibrocystic disease which causes many lumps and cysts to form in the breast. These are not usually cancer.

Some lumps are easily felt and separate from the rest of the breast tissue. A lump caused by cancer may be *attached to the skin*, causing a *dimple*. A lump attached to a nipple may *change the shape* of the *nipple*. A lump attached to the bony wall of the chest will not move.

Check for *discharge* from the *nipple* by milking the breast. Examine the *underarms* for *enlarged lymph glands*. Breast cancer first spreads to the lymph glands under the arm.

COURSE AND COMPLICATIONS

A lump not caused by cancer usually will cause no symptoms. A cancer lump will grow and spread to other parts of the body including the lungs, bone, and brain. Breast cancer that spreads to other parts of the body will cause death.

PATIENT CARE AND PREVENTION

Refer all women who have breast lumps to a doctor. Breast lumps are often removed in an operation. Examining tissue of the lump under a microscope will determine whether or not the lump is cancer.

You cannot prevent breast cancer, but finding a lump early and removing it may prevent death.

REVIEW QUESTIONS

Tumors of the Female Reproductive System

1. Cancer of the cervix occurs among women of all ages. Cancer of the uterus occurs more commonly in a certain age group of women. What age group of women is most likely to develop cancer of the uterus?
2. List three presenting complaints of women that should make you think of cancer of the uterus or cervix.
3. Cancer of the uterus or cervix does not often cause external signs. A pelvic examination is a good way to identify the abnormal signs of cancer in these organs. List four signs of cancer of the cervix or uterus you might find in a pelvic examination.
4. A cancer of the uterus or cervix will grow if it is not identified and treated. Describe the course and complications of cancer of the uterus or cervix.
5. Fibroid tumors of the uterus are the most common tumors of the female genital organs. List the history and physical examination findings that will help you diagnose fibroid tumors of the uterus.

6. Describe the care of a woman with a tumor of the female reproductive system.
7. Describe the medical history and physical examination findings of a tumor of the ovary.
8. What care would you give a patient with a tumor in her ovary?
9. You should refer women with breast lumps to a doctor. What physical examination findings will make you suspect a breast lump caused by cancer? Describe these findings.

REVIEW EXERCISE

Case Study 55

Name of Patient: Williams, Ginette

Sex: Female

Date of Birth: 14 June 1953

Date of Visit: 2 February 1982

Urine: Sugar ++

Vital Signs: Temperature 37°C

Pulse 74

Respirations 16

Blood Pressure 120/80

Weight 52 kg

Presenting Complaint and Medical History: The woman has noticed a small lump in her left breast. The lump is not painful or tender. She has no other complaints and says that she feels well. Her appetite is good. Her weight has not changed in the past few years. Her menstruation is regular. Her last menstruation started January 15 and lasted five days.

Past medical history: The woman's first pregnancy ended in an abortion at three months. She has one living child. No other serious illnesses are reported.

Family history: Her mother and father are alive and well. Her mother has diabetes.

Physical Examination: This woman is alert and appears healthy. Her throat is normal. Her neck is normal. Her chest and heart sounds are normal. Her abdomen is soft. No enlarged organs can be felt. Her skin is clear.

A breast examination revealed no difference in shape of the breasts. Her nipples are normal and without discharge. A small, firm mass occurs in the upper left quadrant of the left breast. The mass is not tender and is not attached to the skin or the

muscle. No enlarged glands were felt in the left underarm. The right breast is normal.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 56

Name of Patient:	Ling, Cora
Sex:	Female
Date of Birth:	10 October 1930
Date of Visit:	17 December 1981
Vital Signs:	Temperature 36.8° C
	Pulse 86
	Respirations 20
	Blood Pressure 130/80
	Weight 48 kg

Presenting Complaint and Medical History:	The woman complains of a lump in the right breast. She first noticed the lump six weeks ago. She thinks the lump is getting larger. It is not painful. The
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woman says she tires easily and has lost weight. Her appetite is poor.

Past medical history: She has seven children. All the children were delivered normally. Her menstruation stopped two years ago. She cannot remember ever having a serious illness.

Family history: Her mother died at sixty-two from diabetes. Her father died when she was twelve. She does not know the cause of his death.

Physical
Examination:

The woman is pale and thin. She looks anxious. Her mucous membranes and tongue are pale. No enlarged glands were felt in her neck. Her neck is very thin. Her chest and heart sounds are normal. Her lower legs and ankles are not swollen. Her abdomen is soft, and no enlarged organs were felt there. Her genitals are normal. She has no skin rashes.

A breast examination revealed that the right nipple does not point downward like the left, but tilts slightly up. A hard mass can be felt near the nipple. The mass is about 2 cm in diameter and is attached to the skin. The mass does not appear to be attached to deeper structures. Lymph glands in her right underarm are swollen.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 59

Name of Patient: Baker, Joyce
Sex: Female
Date of Birth: 14 November 1937
Date of Visit: 1 April 1982
Vital Signs: Temperature 37° C
Pulse 72
Respirations 20
Blood Pressure 140/90
Weight 79 kg

Presenting Complaint and Medical History: The woman complains of a discharge from her vagina that has been present for three months. The discharge has a trace of blood. She also says she sometimes bleeds after intercourse. Otherwise she feels well, and eats and sleeps well. She does not complain of shortness of breath. She has some edema of her ankles when she has been standing for a long time. The edema goes away after a night's rest. She has no cough, sore throat, or headaches. Her last menstrual period started on March 20 and was normal.

Past medical history: This woman has had eight pregnancies and eight living children. Her last pregnancy ended in a cesarean section. A tubal ligation was performed at that time. She has had no serious illness and has never been in a hospital.

Physical Examination: The woman is an obese, robust looking woman. Her sclera are white. Her tongue is pink and moist. She has no goiter. No enlarged lymph nodes were felt in her neck. Her chest and heart sounds are normal. Her abdomen is soft, and no enlarged organs were

felt there. She has no tenderness in her abdomen. A pelvic examination revealed some white discharge from the vagina. A very small, firm lump has raised on the lip of the cervix.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

Unit 4

Educating Women about Examining their Breasts

STUDENT GUIDE

OBJECTIVES

1. Describe why a woman should examine her breasts.
2. Describe the advantages of having women tell other women about why they should examine their breasts.
3. List some ways women may teach each other about examining their breasts and ways you can help women talk to each other about it.
4. Develop a teaching aid that women may use to educate each other about examining their breasts.

LEARNING ACTIVITIES

1. Join discussions of why women should examine their breasts, why women should educate each other about examining their breasts, and how you can help.
2. Work in small groups to develop a teaching aid women can use to teach each other about examining their breasts.
3. Share your ideas with other groups in class. Practice using your teaching aids.
4. Discuss the teaching aids developed by the groups and what you learned from the session.

4.1 EDUCATING WOMEN ABOUT EXAMINING THEIR BREASTS

Women of any age may have lumps in their breasts. These lumps usually are not cancer. Some lumps, however, may become cancer. Breast lumps found early can be removed. This can prevent any cancer from spreading to other parts of the body.

A woman, herself, is the best person to notice any sign of problems in her breasts. She knows the shape and texture of her breasts better than a doctor or health worker. Therefore, she increases her chances of finding a cancer lump early if she learns the procedure and practices it monthly.

Women can best learn how to examine their breasts by learning the procedure from another woman. Once women learn the procedure, they can teach others.

Talk to women about examining their breasts. Explain that breast cancer is the most common cancer of women. Explain why finding breast lumps early can prevent the spread of a cancer. Tell women that they should learn to examine their own breasts and teach their friends how to examine their breasts also.

When you examine a woman's breasts for lumps, ask her if she would like to learn more about examining her own breasts. Show her how to position herself and feel her own breasts.

Select the Best Time

Start teaching a woman or a group of women about examining their breasts by explaining that a woman's breasts change during her menstrual cycle. A woman should examine her breasts each month at the same time in her menstrual cycle. A few days after menstruation is the best time because a woman's breasts are least full then. The woman will easily feel any unusual lumps.

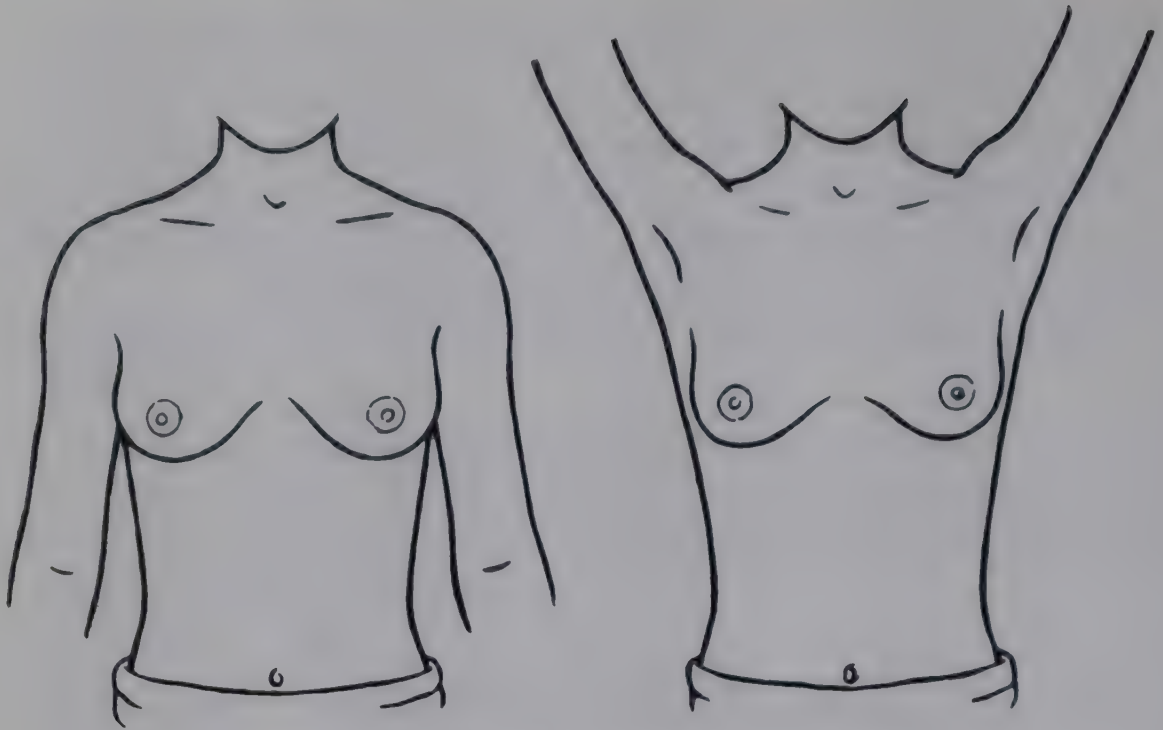
Select the Best Place

Tell women about three ways breasts may be examined: during a bath, in front of a mirror, and while lying down.

During a bath, the woman should keep her fingers flat as she gently moves them over every part of each breast. She should use her left hand to examine the right breast while her right arm is raised above her head. She should use the right hand to examine the left breast while the left arm is raised above her head. Demonstrate this method, then have the woman practice.



A woman who wants to examine her breasts in front of a mirror should first examine them with her arms at her sides. She should look for any differences in the shape of the breasts. She should look for any flat areas or swelling. She should also examine the nipples for any changes. Next, she should raise her arms over her head and again look for any difference in the shape of her breasts. A woman's breasts usually are not the same size, so it is the shape of the breasts, not the size, that she should look at most closely. Then, she should rest her hands on her hips and press down firmly to flex the muscles in her chest. Again, she should look for any differences between her breasts.



EXAMINING THE BREASTS WITH ARMS
AT THE SIDES, AND WITH THE ARMS RAISED

The third way a woman may examine her breasts is to lie down on a floor mat or bed. Show her how to put a pillow or folded towel under her right shoulder and then place her right hand behind her head. Explain that this distributes the breast tissue more evenly on the chest. Then show the woman how to use her left hand to gently feel the breast with the flat of her fingers. She should move her fingers in small circles or with a slight back and forth motion.



A woman will not easily see differences or changes in the shape of her breasts when she first begins to examine them herself. She should examine them frequently until the practice is familiar. When the woman can begin to recognize what her breasts normally look like, then changes will be easier to see.

Check Near the Underarm

Tumors occur most often between the nipple and the underarm. A woman should pay special attention to this area. Also, show a woman how to gently squeeze the nipple of each breast between the thumb and index finger. She should look for any clear or bloody discharge.



A woman who finds a lump or swelling in her breast or a discharge from her nipple should visit a health clinic as soon as possible. Most breast lumps or swellings are not cancer. But to be sure, a woman should have any changes checked.

Teach Others

Ask a woman who has learned to examine her breasts if she would teach others. Ask her what she would need to teach others. Assure her that you will give her any help that she might need.

Follow your teaching session with a visit to the woman's home. Ask her whether she has examined her breasts. Ask her whether she has taught any other women these techniques.

REVIEW QUESTIONS

Educating Women about Examining their Breasts

1. Why should a woman check her own breasts?
2. Who can best teach women to examine their own breasts? How can you help?
3. Briefly describe three ways in which a woman may examine her breasts.
4. What should a woman do if she finds a lump in her breasts or a discharge from her nipples?
5. How often and when should a woman examine her breasts?

Unit 5

Menstrual Cramps, the Side Effects of Contraceptives, Menopause, and Atrophic Vaginitis

STUDENT GUIDE

OBJECTIVES

1. Recognize and describe these signs and symptoms of menstrual cramps, the side effects of contraceptives, menopause, and atrophic vaginitis:
 - Watery or pink discharge from the vagina
 - Smooth and pale walls of the vagina
 - Anemia
 - Infection of a wound
 - Bleeding from the vagina
 - Dull, cramping pain during menstruation
 - Burning pain during sexual intercourse
 - Suddenly feeling very hot
 - Heavy bleeding during menstruation
 - Irregular and scanty menstruation
 - Weight gain
 - Nausea and vomiting
 - Backache
2. Interview and examine patients to identify the signs and symptoms of menstrual cramps, side effects of contraceptives, menopause, and atrophic vaginitis.
3. Describe how to treat and care for women with these problems.
4. Tell women how to care for these problems at home.

LEARNING ACTIVITIES

1. Students and instructor discuss menstrual cramps, the side effects of contraceptives, menopause, and atrophic vaginitis.

2. Attend a family planning clinic and prepare reports of interviews with women who have had side effects from contraceptives.
3. Talk with a woman who has passed menopause about the physical and emotional changes that occur as her child-bearing years end.

5.1 MENSTRUAL CRAMPS

Cramping pain at the time of menstruation, dysmenorrhea, commonly affects young women, but may occur at any age. Usually no cause is known. Something inside the uterus such as a polyp or an IUD may cause the problem. A polyp is a small tumor on a stalk which grows from inside the uterus and cervix.

CLINICAL PICTURE

a. Presenting complaint

A young woman complains of *pain* in her *lower abdomen* or *lower back* which occurs when she has her menstrual period.

b. Medical history

Menstrual cramps are usually *dull, cramping pains* that come and go. The cramps may *start a day before menstruation*. The cramps usually decrease near the end of the menstrual period. *Headaches, nausea, and diarrhea* may occur with the cramps.

Some women's breasts and abdomen swell. The swelling lasts two to three days and may be painful.

c. Physical examination

A physical examination and pelvic examination will not usually expose any sign of a problem. A *polyp* may occur at the *cervical opening* in rare cases.

COURSE AND COMPLICATIONS

Complications are rare. The symptoms often disappear after the woman becomes pregnant or ages.

PATIENT CARE AND PREVENTION

Assure the woman that her menstrual cramps are not a serious health problem. Tell her that aspirin will decrease her pain.

The pain is caused by cramping of the uterus. Aspirin may stop the cramping. The aspirin must be taken when the pain begins to be most effective. See Patient Care Guides.

Encourage menstruating women to continue regular activity. Activity decreases the cramping.

Short rest periods may ease severe cramps. Tell the woman to apply pressure to her lower abdomen with a pillow.

Refer the woman to a doctor if you find a tumor such as a polyp on her cervix.

A woman's IUD may increase her pain during menstruation. Aspirin usually will relieve the pain and allow the woman to keep her IUD in place. The woman may want another type of contraceptive. You may try removing the IUD on a trial basis to see if the problem improves and whether a different contraceptive is better.

5.2 SIDE EFFECTS OF CONTRACEPTIVES

Contraceptives may cause side effects. Side effects include weight gain, nausea, vomiting, backache, discharge from the vagina, bleeding, and infection.

Weight Gain

Some women gain weight when they start to take an oral contraceptive. The contraceptive causes the body to hold more fluid. The fluid and weight will gradually decrease after three to six months.

Nausea and Vomiting

Oral contraceptives make some women nauseous at first. The nausea usually decreases after a few weeks or months. Some women may vomit. Refer the woman to a doctor if her vomiting is severe. You may also change the dosage or type of oral contraceptive.

Backache

Women who use an IUD or take contraceptive pills often complain of a low backache. Reassurance and aspirin will usually relieve the pain.

Vaginal Discharge

An IUD or an oral contraceptive may cause discharges from the vagina.

Treat any discharge from the vagina as vaginitis. Pelvic inflammatory disease may occur with an IUD. Remove the IUD and treat the condition.

Bleeding

Women who use an oral contraceptive or an IUD commonly complain of menstrual cramps, heavy bleeding, scanty bleeding, or spotting. Perform a pelvic examination in all cases. Look for signs of pregnancy, infection, and cancer.

Give the woman a month's supply of ferrous sulfate and folic acid if you find no sign of a serious problem and if her bleeding is slight. See Patient Care Guides.

Refer her to a doctor if the problem continues after one month.

Immediately refer a woman to a doctor if she has heavy bleeding.

Infections

Cuts made for a tubectomy may become infected. Check the wound for signs of a deep infection, tenderness, or pus. Refer the patient to a doctor if the infection is deep.

Treat a surface infection by washing the wound with an antiseptic and removing the sutures. Use saline soaks on the wound for fifteen minutes two times a day until the wound is healed. After each soak, cover the wound with a sterile bandage. See Patient Care Procedures.

5.3 MENOPAUSE

Menopause marks the end of a woman's reproductive period. Her estrogen hormone decreases and stops. Ovulation stops. Her monthly menstruation becomes scanty, irregular, and then stops. Menopause is a normal process in a woman's life.

A woman can become pregnant when her menstruation is irregular and scanty. She can become pregnant even after her menstruation has stopped, although this rarely happens. Many problems that occur during menopause relate to either scant or heavy bleeding. Bleeding that starts after menopause is often a sign of cancer.

CLINICAL PICUTRE

a. Presenting complaint

Presenting complaints of women who reach the age of menopause vary. Some women may visit a clinic because their menstrual period has changed. They may complain that their *menstruation* has become *scanty* and *irregular* or *very heavy*.

Some women suddenly feel very hot for a short time. They may describe the feeling as "*hot flashes*."

b. Medical history

Most women between the ages of forty-five and fifty-five will have a history of a changing menstrual pattern. Their menstruation becomes scanty and irregular.

Some women have heavy bleeding. They usually will tell of several scanty and irregular menstruation periods occurring before the heavy bleeding.

Some women suddenly feel very hot and uncomfortable. They will describe feeling suddenly hot all over. The feeling usually lasts for a few minutes.

c. Physical examination

Examine the woman for *signs of anemia if she has had long periods of bleeding*. She will be pale. Her conjunctivae, mucous membranes,

and nail beds will be pale. Her fingernails may be flattened or dipped if she has been anemic for a long time.

A pelvic examination will not expose any sign of a problem. The patient may have blood in her vagina from bleeding in her uterus.

PATIENT CARE

Treat menopause as a normal time of life. Urge women to continue active, normal lives. They should have good food, fresh air, exercise, and sleep.

Most women need to know that menopause is a normal transition from one time of life to another. Assure them that they have no serious illness.

Refer women with any amount of bleeding after menopause to a doctor. Bleeding may be a sign of cancer.

5.4 ATROPHIC VAGINITIS

Atrophic vaginitis occurs in some women after menopause. Menopause causes a change in a woman's hormonal secretions. Atrophic vaginitis occurs when the lining of the vagina becomes thin because of a decrease in the estrogen hormone.

CLINICAL PICTURE

a. Presenting complaint

A woman with atrophic vaginitis will complain of a *burning pain* that she feels *during intercourse*. She will also have a *vaginal discharge*.

b. Medical history

The woman will often tell you that her pain during intercourse began months earlier and gradually grew worse. She may tell you she has noticed a watery or pink discharge. *Itching* may occur with the discharge, mostly *after intercourse*.

Her partner in sexual intercourse will not have any discharge from his penis. She will tell you that her menstrual period stopped years earlier.

c. Physical examination

The patient will be a woman past menopause. Perform a pelvic examination.

Decide the cause of her vaginitis. An *old woman* can have any kind of vaginitis.

Atrophic vaginitis causes a *slight discharge* that is *watery* and may be *pink* or have a *trace of blood*. The external genitals may be pale, but usually are not inflamed. The *vagina* will look *smooth* and *pale*.

Some *cracks* may occur in the *walls* of the *vagina*.

COURSE AND COMPLICATIONS

Untreated atrophic vaginitis becomes very painful. The vagina scars and shrinks. However, symptoms and signs disappear with treatment.

PATIENT CARE

Give a woman with atrophic vaginitis enough estrogen suppositories for three months. Tell her to put one suppository inside her vagina every third day for three weeks, then stop for one week. She may then resume inserting the suppositories for another three weeks. Continue this schedule for three months. The patient should avoid intercourse until her pain stops. The treatment may have to be repeated. See Patient Care Guides.

PREVENTION

Atrophic vaginitis cannot be prevented.

REVIEW QUESTIONS

Menstrual Cramps, the Side Effects of Contraceptives, Menopause, and Atrophic Vaginitis

1. Menstrual cramps commonly affect young women. The symptoms disappear as the woman grows older or when she has a child. Describe the discomfort of menstrual cramps as a woman would report the problem during an interview.

2. What care would you give a woman who complains of menstrual cramps?

3. Some women complain of side effects of their contraceptive method. The most common side effects are listed below. Describe what care you would give a woman with each of these signs or symptoms:
 - a. Weight gain:

 - b. Nausea and vomiting:

 - c. Backache:

 - d. Discharge from the vagina:

e. Bleeding:

f. Infection of a wound:

4. Menopause is the end of a woman's reproductive period. Women notice changes in their menstrual period during menopause. List two types of changes commonly reported among women between the ages of forty-five and fifty-five.
5. Describe how you would care for a fifty-year-old woman who complains of heavy bleeding during her irregular menstrual periods. The woman has no signs of anemia or other illness.
6. Irregular bleeding occurs as a woman's reproductive period ends. After menopause, however, the woman should not bleed any more. What treatment would you give a sixty-year-old woman who has suddenly started bleeding five years after menopause?
7. Atrophic vaginitis occurs in women past menopause. What causes atrophic vaginitis?
8. Describe the presenting complaint, and medical history of a patient with atrophic vaginitis.

9. How would you treat a woman with atrophic vaginitis?
10. A fifty-six-year-old woman complains of a pink and watery discharge. She is not bleeding and has no fever. What is the most likely diagnosis of her problem?

REVIEW EXERCISE

Case Study 60

Name of Patient:	Gump, Violet
Sex:	Female
Date of Birth:	8 February 1928
Date of Visit:	28 March 1982
Vital Signs:	Temperature 36.8° C
	Pulse 78
	Respirations 18
	Blood Pressure 90/60
	Weight 60 kg
Presenting Complaint and Medical History:	The woman complains of a discharge from her vagina. She says the discharge is watery and has a trace of blood. She feels pain during intercourse. Her problem began a few months ago and is growing worse. She stopped menstruating two years ago.
Physical Examination:	The woman looks healthy. Her mucous membranes are pink. Her chest sounds are normal. Her heart sounds normal. Her abdomen is soft and non-tender. No organs were felt. She has a scar from an operation. A pelvic examination reveals a watery discharge. The discharge has no odor. Her cervix is normal. The walls of her vagina are smooth and pale. No tenderness was found during palpation of her uterus.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

Unit 6

Assessing Women with Reproductive System Problems; Skill Development

STUDENT GUIDE

OBJECTIVES

1. Interview and examine women with reproductive system problems.
2. Recognize and record physical signs and symptoms of women's reproductive system problems.
3. Counsel women with reproductive system problems about the home care, prevention, and early identification of reproductive system problems.

LEARNING ACTIVITIES

1. Participate in two days of clinical practice in a hospital ward or outpatient clinic. During that time, you will interview, examine, and practice providing care to women. You will also present health messages about breast examinations and the prevention of reproductive system problems.
2. Participate in one week of general skill development practice in a hospital ward or outpatient clinic.

Unit 7

Caring for Women with Reproductive System Problems; Clinical Rotation

STUDENT GUIDE

ENTRY LEVEL

Before starting your clinical experience, you must have:

1. Passed a test of your knowledge about women's reproductive system problems with a score of at least 80%.
2. Earned at least two Satisfactory ratings on how you:

Recognize the abnormal physical signs of women's reproductive system problems

Interview women about their problems

Perform pelvic and breast examinations

Advise women about the prevention and care of reproductive system problems

Present health messages about how women should examine their breasts

OBJECTIVES

1. Diagnose all the women's problems described in this module with the help of Diagnostic Guides.
2. Properly record information about medical history, physical examination, and patient care.
3. Provide correct patient care, using the treatments described in this module.
4. Advise women about the home care, early identification, and prevention of reproductive system problems.

LEARNING ACTIVITIES

You will provide supervised patient care for one month in a hospital ward or outpatient clinic.

During that time, your supervisor will help you identify and treat women with reproductive system problems. You will be expected to use Diagnostic Guides and Patient Care Guides.

EVALUATION Level II

When you feel that you have had enough experience, ask your supervisor to evaluate you. He will use a log book to guide him during the evaluation. This log book contains a list of the problems you will work with during your clinical experience. It shows how many women with reproductive system problems you should see. Your supervisor will evaluate you only on those problems that are contained in the log. As your supervisor watches you deal with a problem, he will write his rating in the log book. He will rate you in the following way for diagnosis and patient care.

1 = Diagnosis incorrect

2 = Diagnosis correct, treatment incorrect

3 = Diagnosis and treatment correct, but no patient advice given

4 = Diagnosis, treatment, and patient advice correct

You will be expected to get two ratings of 4 for each problem.

Unit 8

Helping a Community Prevent and Care for Reproductive System Problems; Community Phase

STUDENT GUIDE

ENTRY LEVEL

Before you start your community experience, you must

1. Score at least 80% on a test of your knowledge about women's problems.
2. Complete a month of clinical experience in a hospital ward or outpatient clinic.
3. Score two ratings of 4 on diagnosis, treatment, and patient advising for each of the problems in the module.
4. Earn at least two Satisfactory ratings on teaching community health workers.
5. Earn at least two Satisfactory ratings on presenting community health messages about early identification and prevention of women's problems.

OBJECTIVES

1. Provide clinical services to women with reproductive system problems.
2. Identify women with diseases spread by sexual contact and plan a program to prevent them from occurring and spreading.
3. Advise women in the community how to examine their breasts and how to prevent the spread of infectious diseases.
4. Identify other members of the health team who can assist in counseling women about reproductive system problems.

LEARNING ACTIVITIES

Your community experience will last three months. During that time, in addition to providing clinical services, you should:

1. Survey the community to identify the most common women's problems.
2. Identify any local customs that increase or decrease the occurrence of women's problems.
3. Meet with women in the community to advise them about early identification of breast lumps and prevention of women's problems.
4. Prepare a community health worker to help you in community education.

EVALUATION Level III

During your community experience, your supervisor will evaluate you. To do this he will use the standards set out in the log book.

**DISEASES OF INFANTS
AND CHILDREN**

The MEDEX Primary Health Care Series

DISEASES OF INFANTS AND CHILDREN

Student Text

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FUNDED BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT CONTRACT NO. DSPE-C-0006. The views and interpretations expressed are those of the Health Manpower Development Staff and are not necessarily those of the United States Agency for International Development.

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UNIT 7

***Providing Care for Infants and Children with Diseases;
Clinical Rotation***

Student Guide 127

UNIT 8

***Helping the Community Prevent and Care for Diseases
of Infants and Children; Community Phase***

Student Guide 129

TASK ANALYSIS TABLE

Diagnosing, treating, and preventing common problems of infants and children

Work Requirements	Training Requirements	
DUTIES	SKILLS	KNOWLEDGE
<p>The MLHW will:</p> <ol style="list-style-type: none"> 1. Take and record the medical history of all infants and children presenting with a complaint 	<p>The MLHW trainee will demonstrate his ability to:</p> <ol style="list-style-type: none"> 1.1 Record the infant's or child's presenting complaint 1.2 Question parents about the infant's or child's illness 	<p>The MLHW trainee will show that he knows:</p> <ol style="list-style-type: none"> 1.2.1 How to question parents about their infant's or child's disease 1.2.2 Medical history information needed to diagnose the diseases of infants and children: <ul style="list-style-type: none"> Pattern of poor growth Frequent loose or watery stools Stomach cramps Less than the normal amount of urine passed Inability to suck Report of crying and irritability Fungus infection of the vagina before delivery Vomiting Fever and chills Pain in the mouth while chewing Loss of appetite

Work Requirements DUTIES	Training Requirements	
	SKILLS	KNOWLEDGE
<p>2. Perform a physical examination of all infants and children presenting with a complaint</p>	<p>1.3 Record a patient's medical history</p> <p>2.1 Recognize and identify the signs of diseases of infants and children:</p> <ul style="list-style-type: none"> Poor growth rate Flaking skin Edema Decreased subcutaneous fat and muscle mass Dry lips and mouth Dry, and tenting skin Sunken eyes Sunken fontanelle Rigid posture Fits or convulsions Redness or foul odor around an umbilical stump Jaundice Red, pussy eyes in newborns White or gray patches on the tongue and mucous membranes of mouth White spots on the lining of the cheeks Stridor Trouble breathing 	<p>1.3.1 How to use medical history forms</p> <p>2.1.1 The anatomy and physiology of infants and children</p> <p>2.1.2 The abnormal physical signs of diseases of infants and children</p> <p>2.1.3 How to determine mild, moderate, and severe degrees of malnutrition and dehydration</p> <p>2.1.4 How to examine a newborn and a child</p>

<div>Work Requirements</div> <div>DUTIES</div>	<div>Training Requirements</div> <div>SKILLS</div> <div>KNOWLEDGE</div>
<div>3. Diagnose the common problems of infants and children:</div> <div>Malnutrition</div> <div>Diarrhea and dehydration</div> <div>Tetanus of the newborn</div> <div>Septicemia in the young infant</div> <div>Gonococcal conjunctivitis of the newborn</div> <div>Thrush in the newborn</div>	<div>Intercostal retractions</div> <div>Whooping cough</div> <div>Measles rash</div> <div>Enlarged parotid gland</div> <div>Chicken pox rash</div> <div>Weakness of arms or legs</div> <div>Swelling and tenderness in joints</div> <div>Heart murmur</div> <div>Enlarged and tender finger and toe joints</div> <div>Enlarged liver</div> <div>Enlarged spleen</div> <div>Tenderness, redness, swelling and heat over bone</div> <div>2.2 Give a physical examination for diseases of infants and children and record the findings</div> <div>3.1 Use the Student Text and Diagnostic Guides to identify common problems of infants and children</div> <div>2.2.1 How to record the findings of a physical examination</div> <div>3.1.1 The clinical picture, course of diseases, and disease complications of infants and children</div>

<div>Work Requirements</div> <div>DUTIES</div>	<div>Training Requirements</div> <div>SKILLS</div> <div>KNOWLEDGE</div>	
<p> Croup Whooping cough Measles Mumps Chicken pox Poliomyelitis Rheumatic fever Sickle cell anemia Osteomyelitis </p> <p>4. Treat and care for infants and children</p>	<p>4.1 Use the Student Text, Formulary, Patient Care Procedures, and Patient Care Guides to treat diseases of infants and children</p> <p>4.2 Decide how to treat diseases of infants and children</p>	<p>4.1.1 Where to find reference manuals and how to use them</p> <p>4.2.1 The correct medical treatment and patient care procedure for each common problem of infants and children</p> <p>4.2.2 The properties of drugs and medicines for diseases of infants and children</p> <p>4.2.3 The side effects and contraindications of drugs and medicines for diseases of infants and children</p>

Work Requirements	Training Requirements	
DUTIES	SKILLS	KNOWLEDGE
5. Share with parents ideas on how to prevent and care for diseases of infants and children	4.3 Perform treatment and patient care procedures: Prepare super porridge Provide oral rehydration therapy Give intravenous rehydration using a peripheral vein Give intravenous rehydration using a scalp vein Give nasogastric tube feedings Express breast milk for feedings	4.3.1 How to care for an infant or child
6. Advise health workers, patients' families, and others how to care for and prevent diseases of infants and children	5.1 Advise parents about initial treatment, referral, follow-up treatment, and prevention of health problems of infants and children. Teach mothers how to: Prepare and use super porridge Prepare and use oral rehydration solution Express breast milk	5.1.1 Recommended home care procedures 5.1.2 What information to tell parents about possible side effects and contraindications of drugs used in treatment 5.1.3 How to prevent problems of infants and children
	6.1 Tell a patient's family and community about diseases of infants and children and how to prevent them	6.1.1 How to tell groups of people about diseases of infants and children, using aids to make the message clear

Work Requirements	Training Requirements	
DUTIES	SKILLS	KNOWLEDGE
	6.2 Teach community health workers about diseases of infants and children	6.2.1 The content of community health worker modules
	6.3 Contact a health office for assistance	6.3.1 When and how to ask other members of the health team for help

SCHEDULE

Diseases of Infants and Children

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Introduction to Diseases of Infants and Children module	History and physical examination of infants and children; Clinical practice	Treating and caring for patients with malnutrition	Treating and caring for patients with diarrhea and dehydration	Assessing problems of the newborn
History and physical examination of infants and children	Assessing patients with malnutrition	Assessing patients with diarrhea and dehydration	Malnutrition, diarrhea, and dehydration; Clinical practice	Treating and caring for the newborn with problems; Clinical practice
History and physical examination of infants and children; Clinical practice				Tetanus Septicemia Gonococcal conjunctivitis Thrush

DAY 6	DAY 7	DAY 8	DAY 9	DAY 10
Assessing the common infections of children	Problems of infants and children Polio myelitis Rheumatic fever Sickle cell anemia Osteomyelitis	Diagnosing and caring for newborns, infants, and children with disease; Clinical practice Group A - Care of newborns, infants and children Group B - Delivering health messages Group C - Interviewing parents and examining newborns, infants, and children	Diagnosing and caring for newborns, infants, and children with disease; Clinical practice Group A - Delivering health messages Group B - Interviewing parents and examining newborns, infants, and children Group C - Care of newborns, infants, and children	Diagnosing and caring for newborns, infants, and children with disease; Clinical practice Group A - Interviewing parents and examining newborns, infants, and children Group B - Care of newborns, infants, and children Group C - Delivering health messages
Treating and caring for children with common infections Croup Whooping cough Chicken pox Measles Mumps	Family and community education: care and prevention of diseases of infants and children			
Posttest				

Skill development: two weeks
Clinical rotation: one month
Community phase: three months

Introduction

You have already studied the Anatomy and Physiology, Medical History, and Physical Examination modules. What you learned in these clinical knowledge and skills modules has prepared you for the study of children's problems. So before you start this module, be sure you know:

- The normal anatomy and physiology of newborns, infants, and children

- How to perform and record the results of a medical history and physical examination of a newborn and a medical history and physical examination of an infant and child

- How to present health messages

If you are not sure how well you know this information or can do these procedures, review the clinical knowledge and skills modules before you go on.

Learning activities in this module will help you learn how to properly diagnose and care for problems of newborns, infants, and children. These activities will take place in the classroom and in a hospital clinic or health center.

Your schedule shows you when the learning activities will occur. Student guides in front of each unit tell you more about what you will be expected to do. The units will be taught in order, from Unit 1 to Unit 6. Your teacher will make special arrangements for Units 6, 7, and 8 which will take place in a clinic and a community.

This training program can succeed only if you take an active part. Prepare for each session. Before each session:

- Read the Student Text and answer the review questions that go with it

- Read the Patient Care Guides and study the drugs you will be using

Write down questions to ask your teacher about any part of the lesson you do not understand

In class, the teacher will answer the review questions and any other questions you have.

EVALUATION

This training program will help you build your knowledge and skills. Regular evaluations will allow your teacher to watch your progress. If your progress does not meet the standard, you will be given more time to learn the subject. Your instructor will use the clinical and community performance records to measure your progress. Look at these performance records to prepare for your evaluations.

EVALUATION Level I

After ten days of classroom and clinical experiences related to children's problems, you must be able to pass a written test of knowledge with a score of 80% or higher.

After another two weeks of clinical experience you must receive two satisfactory ratings on your ability to:

- Recognize the abnormal physical signs of children's problems

- Interview parents about their child's illness

- Examine newborns and children with disease

- Advise parents about the prevention and home care for children's problems

- Present health messages about prevention of children's diseases to members of the community

EVALUATION Level II

You will have one month of clinical practice. To satisfy the requirements of this clinical evaluation, you must correctly diagnose, treat, and advise two patients for each of these problems: malnutrition, diarrhea and dehydration, tetanus, septicemia, gonococcal conjunctivitis, thrush, croup, whooping cough, measles, mumps, chicken pox, poliomyelitis, rheumatic fever, sickle cell anemia, osteomyelitis.

During the clinical practice you must also perform each patient care

procedure listed on your Clinical Performance Record. You must earn at least two Satisfactory ratings for each procedure. The patient care procedures listed on your Clinical Performance Record for this module are:

- Preparation and use of super porridge
- Preparation and use of oral rehydration fluid
- Intravenous rehydration using scalp vein technique
- Intravenous rehydration using peripheral vein technique
- Educating the mother about expressing breast milk
- Feeding a baby by nasogastric tube

EVALUATION Level III

During the three month community phase of your training, a supervisor will observe your performance and rate your skill in:

- Diagnosis and treatment of patients for each of the children's diseases
- Providing parents with advice about home care and ways to prevent the spread of children's diseases
- Conducting community meetings to discuss the prevention and care of children's diseases
- Training a community health worker to assist with the community health program

Your clinical and community performance records list the number of acceptable ratings you must earn for each activity.

Unit 1

Malnutrition

STUDENT GUIDE

OBJECTIVES

1. Recognize these signs and symptoms of malnutrition:
 - Poor growth rate
 - Decreased subcutaneous fat and muscle mass
 - Flaking skin
 - Edema
 - Reddish hair
2. Describe the clinical picture for mild, moderate, and severe malnutrition in infants and children.
3. Interview parents, examine infants and children, and fill out and evaluate growth charts to diagnose malnutrition.
4. Treat and care for infants and children suffering from malnutrition. Prepare and use super porridge.
5. Teach parents and their families how to prevent and care for malnutrition.

LEARNING ACTIVITIES

1. Listen to and observe a presentation on the clinical picture for mild, moderate, and severe malnutrition.
2. View and discuss a slide presentation about marasmus and kwashiorkor.
3. Join in the role-play of a health worker who interviews the parent of an infant or child with malnutrition.
4. Discuss this role-play with the class.

5. Listen to and observe a presentation on the preparation and use of super porridge and the use of growth charts.
6. Listen to and observe a presentation on the six basic health messages on preventing malnutrition.
7. Practice teaching parents about nutrition for children, using the skill checklist at the end of this unit as a guide.
8. In role-play, show how you would treat, care for, and educate parents about malnutrition.
9. For three hours in a clinical setting, assess and care for infants and children with malnutrition; counsel parents about home care and prevention of malnutrition.

1.1 MALNUTRITION

A child with malnutrition is not growing because he does not eat enough of the right foods. The right foods can mean breast milk if the child is very young, or a healthful mixture of solid foods if the child is weaned from the breast.

You must recognize the signs of malnutrition in a child to help him. But more importantly, you must learn how to prevent malnutrition before it occurs. You can prevent malnutrition more easily than you can treat it. Once a child has suffered malnutrition, its effects will stay with him for the rest of his life.

Weigh every child you examine. Record the child's weight on a growth chart. The growth chart will help you see the child's rate of growth for the first five years of his life.

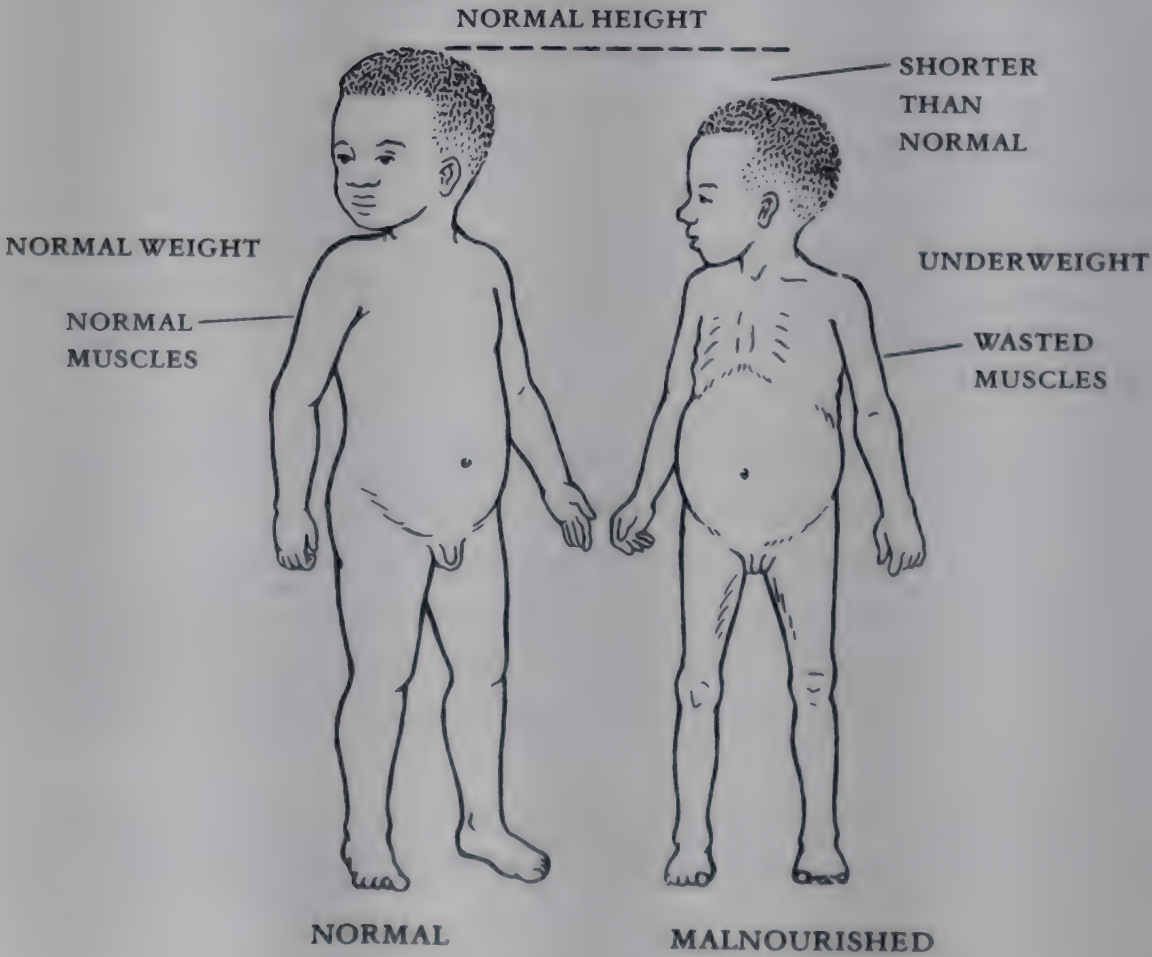
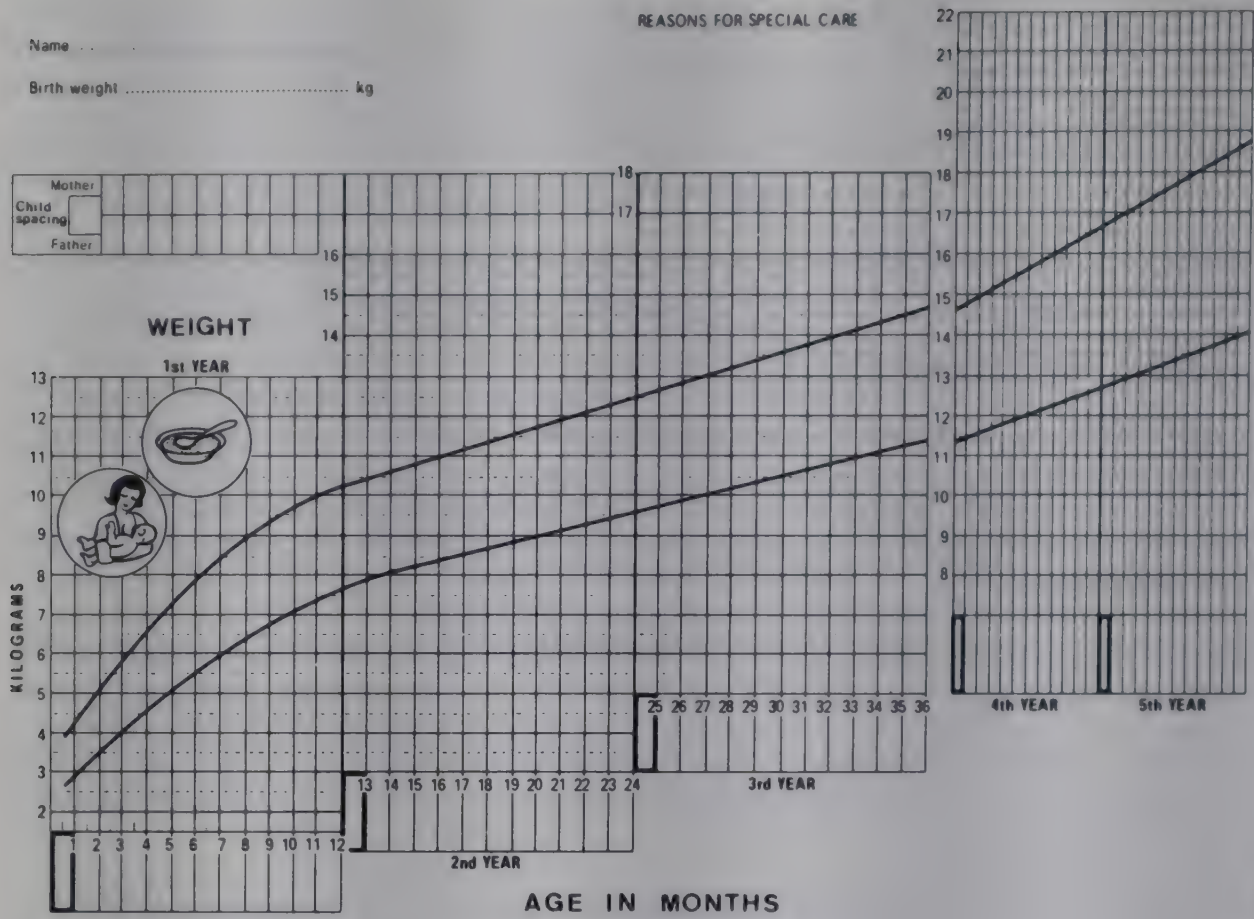
Notice the two dark lines that rise at an angle across the growth chart. The bottom line tells you the least amount of kilograms a child should weigh at any age during the first five years of life. Notice that a child who weighs 2.5 kg at birth should weigh at least 5.5 kg when he is six months old. The same child should weigh 7.5 kg at twelve months. He doubles his weight in six months. He triples his weight during the first year. After that, he gains weight more slowly. The child still, however, continues to gain about 2 kg each year during his second and third year of life.

Any time a child's growth rate falls beneath the bottom line of the growth chart, he needs help. He suffers malnutrition.

When a child's growth line slows and starts to slip below the bottom line of the growth chart, he suffers mild malnutrition. When his rate of growth slows even more, he suffers moderate malnutrition. When the child starts to look thin, sick, and small for his age, he suffers severe malnutrition.

Because malnutrition affects the growth of a child's body and brain, any stage of the disease, even the mildest, puts the child at high risk.

GROWTH CHART





MALNUTRITION AND INFECTION CIRCLE

Mild or moderate malnutrition can quickly lead to severe malnutrition. Malnutrition breaks down a child's ability to fight disease and infection. When the child with malnutrition becomes sick, the disease or infection quickly becomes severe. The child with a fever burns up his body's stored fats and muscle. The sick child's diarrhea passes food out of his body before it can be used to make new muscle and fat. The child grows thinner and loses his appetite. His malnutrition grows more severe. He becomes exposed to more infection and more disease. If this cycle is not broken, the child will die.

The three most frequent causes of malnutrition are:

- Lack of breast milk
- Lack of energy and protein foods
- Bottle feeding

The best source of protein and energy for an infant and child comes from his mother's breast. Children should breast-feed until they are two or three years old. However, many children are weaned from the breast before they are even six months old.

Some children are weaned early because the mother becomes pregnant again. Other mothers wean their children because they want to feed



BREAST-FEED UNTIL THE CHILD IS TWO OR THREE YEARS OLD. ALSO BEGIN FEEDING SOLID FOODS WHEN THE CHILD IS FIVE OR SIX MONTHS OLD.

them with a bottle. Any mother who weans her child early deprives her child of a rich source of food. In many cases, she also exposes the child to the dangers of malnutrition.

Mother's milk is best, but as the child grows, he will need more food.

When a child is five or six months old, the mother should start giving him solid foods like cereals, grains, and beans in addition to breast milk. These work with the mother's milk to help the child grow strong.

Sometimes, however, solid foods are hard to find or too expensive for parents to buy. Food is most often hard to get in cities distant from a food supply. You may have to help city parents find foods they can afford.

Urge parents to start feeding their children solid foods when the child is six months old. The foods should be rich in protein and easy to digest.

CLINICAL PICTURE

a. Presenting complaint

Parents do not often bring their children to a hospital or clinic because their child suffers malnutrition. Often, the parents do not even know that malnutrition is their child's problem. They bring the child to the clinic because he is *sick* or because he *cries* and *fusses*. Or the parent worries that the child is not growing as much as he should.

b. Medical history

Look at the child's **growth chart**. If he does not have a growth chart, start one. Find out how much the child weighed at birth. Find out whether he is gaining weight, and whether his weight is above the bottom line of the growth chart.

Ask the mother whether she has **weaned** her child. Also ask her what she feeds the child and how much food the child eats.

Note whether the child **cries** and **fusses** more than other children his age. Also note whether the child is active or **listless**.

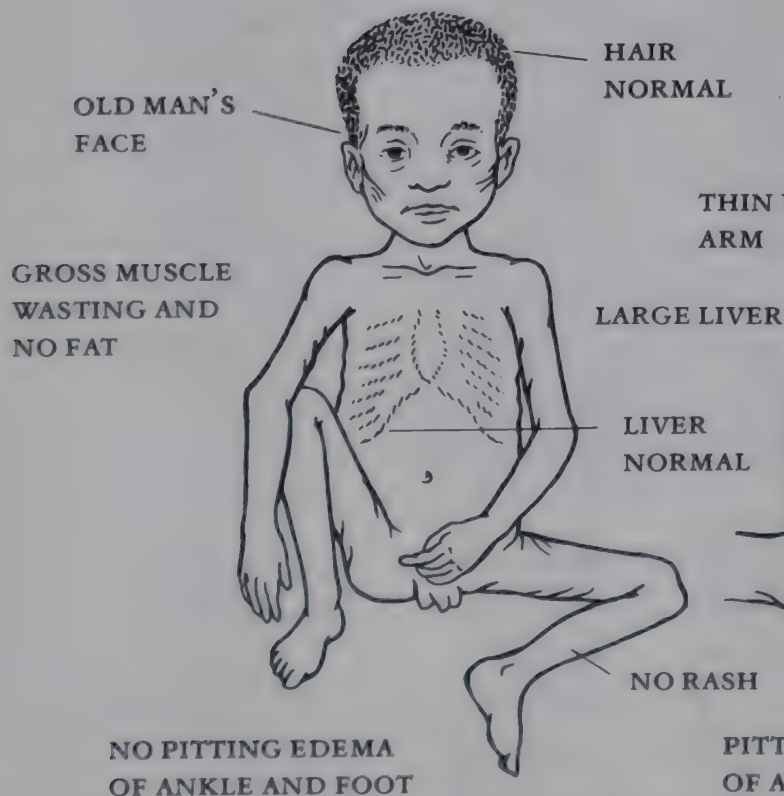
Find out whether the child has had trouble fighting illness and infection. Ask whether the child has had **attacks** of **diarrhea** or whether he was recently treated for **measles** or **pneumonia**.

c. Physical Examination

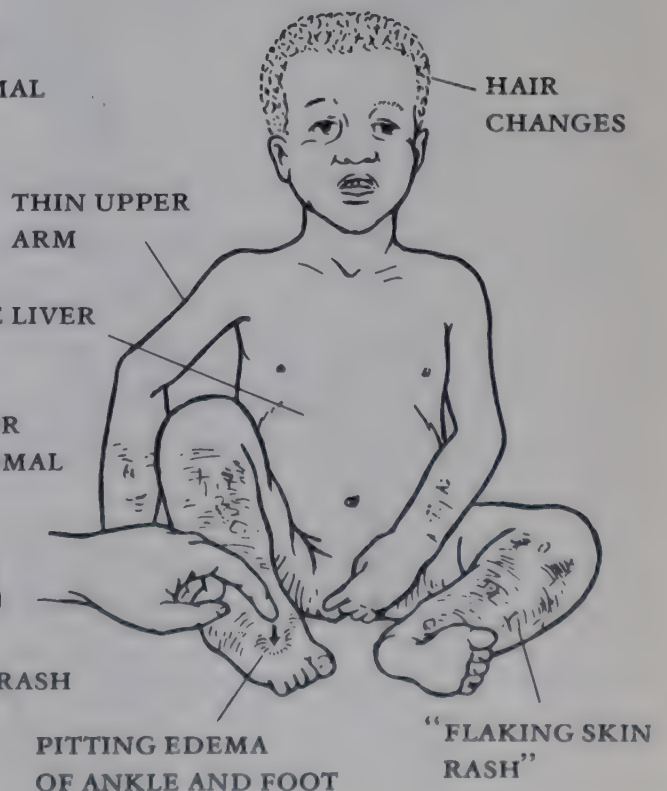
Children with severe malnutrition look sick, weak, and unhappy. When you examine children with severe malnutrition, you will notice two different types.

The first, most common type of severe malnutrition occurs when a child has not had enough food for a long time. He is very **thin**. The **bones** in his face and chest **stand out**. He has little muscle or fat.

MARASMUS



KWASHIORKOR



His hair is coarse and it easily falls out. The child looks miserable. He is quiet.

This form of severe malnutrition is called marasmus. The child with marasmus starves from lack of food. A child with the second type of severe malnutrition eats food, but not enough of the right kind of food.

This second type of severe malnutrition is called kwashiorkor. The child with kwashiorkor does not eat enough protein foods like fish, beans, or meat. His arms will look very thin and wasted, but his *face* and *legs* will look *puffy*. He may have a *skin rash* which looks like *flaking paint*. His *hair* may have a *reddish* color.

Children can suffer from both types of malnutrition, marasmus and kwashiorkor, at the same time. These children are *thin* and *bony*, but they have *edema* which makes their faces and legs swell.

Weigh every child you examine. Record his weight on a growth chart. A malnourished child will be *underweight for his age*. If you weigh children regularly, you will be able to detect malnutrition before it becomes severe.

Measure around the upper arm of children who are between one year old and five years old. A malnourished child has small muscles. His *upper arm* will be *less than 14 cm around*. This test for malnutrition is only useful for children between one year old and five years old.



MEASURING THE UPPER ARM
OF A MALNOURISHED CHILD

COURSE AND COMPLICATIONS

Children may have mild malnutrition for many years. They will always be shorter and have smaller muscles and bodies than children who are not malnourished.

Children with malnutrition often suffer from many other illnesses. Most commonly, they suffer from diarrhea and dehydration. They often develop measles, pneumonia, otitis media, severe anemia, and tuberculosis.

If the malnourished child does not get enough vitamin A, he will develop night blindness. Always ask about how well a child can see at dusk and after dark. Examine his eyes carefully for signs of vitamin A deficiency.

The severely malnourished child will very rapidly die from any kind of illness.

PATIENT CARE

The care of a malnourished child depends on the child's age and the severity of his malnutrition.

For children less than six months old with mild to moderate malnutrition, follow these steps.

- a. Encourage the mother to breast-feed her infant every three hours.
- b. Explain to the mother that she needs extra food to make enough breast milk for her child. She should especially eat protein foods such as fish, beans, or meat.
- c. Insist that the child take only breast milk, not bottle milk. Explain the dangers of bottle milk to the mother and father.
- d. Tell mothers not to stop feeding their children when their children are ill. Explain the dangers of this practice.

If the mother cannot produce breast milk, show her how to use cow's milk safely. Show her how to boil the milk, add small amounts of cereal or legume porridge, and feed this to the child three times a day.

- e. Weigh and examine the child at least once a month. Continue to encourage and guide the mother.

For children who are more than six months old and who have mild to moderate malnutrition, follow these steps.

- a. Tell the mother she should continue to breast-feed her child until he is at least two years old.
- b. Encourage the mother to eat extra food so her body can produce the breast milk her child needs.
- c. Show the mother how to prepare super porridge. See Patient Care Procedures. Feed the infant this porridge four times a day. Add other foods to the child's diet. The child needs fruit, vegetables, eggs, meat, or fish three times a day.
- d. Do not use the bottle. If the mother cannot breast-feed the infant, give the child boiled milk with a clean cup and spoon.
- e. See the child at least once a month. Record his weight and height at each visit. Ask the mother what foods she feeds her child. Encourage her efforts to improve the child's diet.
- f. Instruct the mother to feed her infant when the infant becomes ill. Sick children need more food than healthy children.

For children with severe malnutrition, follow these steps.

- a. If the child is unconscious or too weak to swallow liquids or solids, immediately send him to a hospital.

If the child has kwashiorkor or marasmus but is able to swallow liquids or solids, you can start treatment in his home or at the health center.

- b. The child must eat at least ten to twelve times a day. He may have lost his appetite. Urge him to eat.
- c. Give the child at least six small feedings of a mixed porridge such as super porridge daily for one week. Then add extra feedings of vegetables, fruit, eggs, and milk.
- d. If the mother can still breast-feed, encourage her to do so.
- e. Weigh the child every day. The child with marasmus will slowly gain weight. If the child with marasmus loses weight or develops a respiratory infection, send him to a hospital.

A child recovering from kwashiorkor will start to lose weight as his edema lessens. Then he should begin to gain weight. If a child with kwashiorkor gains weight during the first three to four days of treatment or develops any infection, send him to a hospital.

- f. If you find Bitot's spots or night blindness, treat the child with vitamin A capsules. See Patient Care Guides.

As the child starts to improve, follow these steps.

- a. Make sure that parents understand that lack of protein and energy foods is the reason for their child's illness.
- b. Continue feeding the child super porridge. See Patient Care Procedures.
- c. Explain to the mother that she must give her child different kinds of food.
- d. Ask the parents to bring the child to see you at least once a week.
- e. If you have treated several malnourished children in the same community, start a special nutrition education clinic.

Teach all families the six basic health messages on preventing malnutrition:

Breast-feed every child until he is two to three years old. Do not use bottles.

Start adding new foods such as super porridge made with grains and legumes to the child's diet at five to six months.

Give a variety of fruits, vegetables, eggs, beans, and meat to children more than six months old.

Feed children at least four meals a day. Children need to eat more often than adults because they eat small amounts of food at one time.

Continue to feed sick children.

Give pregnant and lactating women extra vegetables and protein-rich foods.

REVIEW QUESTIONS

Malnutrition

1. What is the best way to tell whether a child is suffering the effects of mild malnutrition?
2. A mother may bring her malnourished child to you because of a problem such as diarrhea, measles, or pneumonia. Explain why many children suffer from these problems when they are malnourished.
3. Because treatments for marasmus and kwashiorkor are different, you must be able to tell which type of malnutrition a child suffers. In the chart below, fill in the description of each problem. Number 1 has been completed as an example.

	MARASMUS	KWASHIORKOR
General appearance	no fat on bones, usually quiet	miserable and crying
Muscles		
Skin		
Face		
Hair		

4. Marasmus and kwashiorkor are two types of severe malnutrition. Which of these occurs when a child has not been eating enough protein?

5. Name three factors which affect the nutrition of a child.
6. The basic treatment for malnutrition is providing food. What should be done for a four month old infant who suffers mild malnutrition and has been drinking diluted formula from a bottle?
- a.
 - b.
 - c.
 - d.
7. What should you do for a two-year-old child with severe malnutrition who is conscious and able to take food by mouth? Describe your feeding program, your instructions to the child's mother, and your follow-up schedule.
- a.
 - b.
 - c.
 - d.
 - e.
 - f.

After the first week:

- a.
- b.
- c.
- d.
- e.
- f.

8. To help prevent malnutrition, conduct maternal and child health clinics. In these clinics, you can teach parents the six basic health messages on preventing malnutrition. The first message is "Breast-feed children until they are two to three years old. Do not use bottles." Explain the importance of this message.

9. Malnourished children need nutritious food to grow strong again. What food can you teach a mother to make at home to help her baby grow strong?

REVIEW EXERCISE

Malnutrition

1. Plot the following information on a growth chart and decide whether a problem exists. Write what you would do to help the patient.

Information for exercise:

Female infant born 6 December 1980

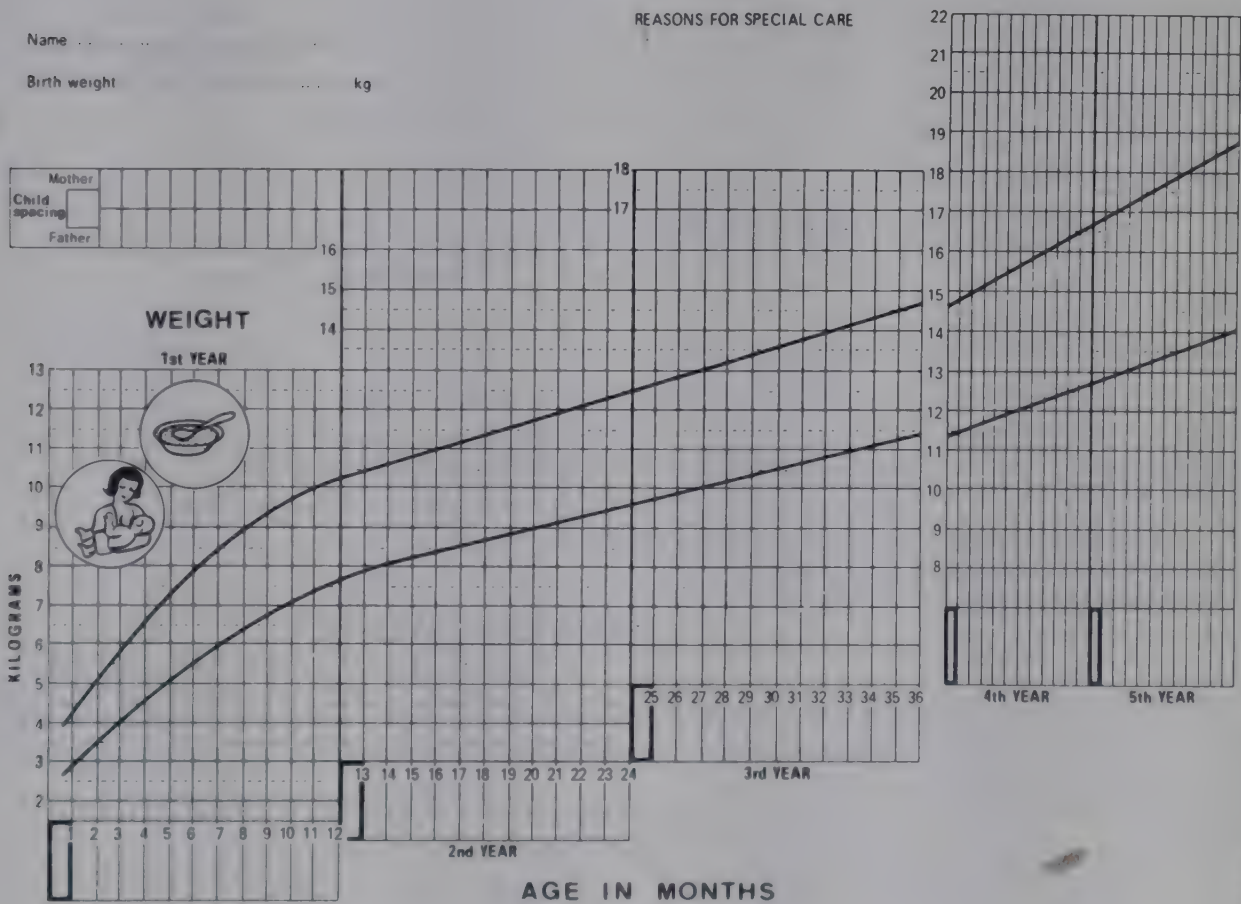
Weight at birth - 3 kg

Weight at three months - 4.5 kg

Weight at six months - 6 kg

Weight at nine months - 6.5 kg

Weight at one year - 7 kg



2. Without looking at your text, write the six basic health messages on preventing malnutrition.
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.
3. Without looking at your text, construct a diagram of the malnutrition and infection cycle and describe at least two places where the cycle could be broken.

REVIEW EXERCISE

Case Study 32

Name of Patient: Roon, Lane

Sex: Male

Date of Birth: 1 May 1971

Date of Visit: 10 October 1972

Vital Signs: Temperature 37°C

Pulse 110

Respirations 26

Weight 6.1 kg

Presenting

Complaint and
Medical History:

The mother says her child "will not eat anything."

The mother says her child has no appetite. She has noticed that his legs are swollen. He lies around. He has diarrhea three to four times a day. His diarrhea stools look greasy and soft, and they smell very foul. He had skin infections last year, but they have cleared.

Family History:

The child is the sixth of seven children. The seventh child was born four months ago. The mother weaned the patient two weeks after the birth of the youngest child because she didn't have enough milk for them both. Since then, the patient has been eating cassava porridge and gravy. The family sometimes gives him fish.

Physical

Examination:

The patient is a very sick child with a fussy cry. He does not smile. His hair is very fine. His skin looks pale. He has a sore at the corner of his mouth. His mucous membranes are pale. Some fine rales can be heard in his lungs. His heart sounds are weak.

The boy's abdomen is distended and soft. His bowel sounds are normal. His liver can be felt below the right rib margin.

Light colored areas of skin appear on the inner sides of his thighs. The patient's arms and legs have swollen; he has pitting edema to his knees. His skin feels cold.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most useful in making the diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. What treatment would you give this patient?
5. What advice would you give the mother of the child?

SKILL CHECKLIST

Teaching Parents about Nutrition of Infants and Children

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students share information with parents about nutrition of children.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When you share with parents information on nutrition, you should first decide which information the parents need most:

	YES	NO	RATING	COMMENTS
1. Information about malnutrition				
2. How to prepare super porridge				
3. How to use the cup and spoon method of feeding				
4. Information on basic nutrition				

You should share with parents information on:

	YES	NO	RATING	COMMENTS
1. Early signs of malnutrition				
2. Reasons for malnutrition				
3. The relationship of diarrhea and dehydration to malnutrition				
4. How to prevent malnutrition				

You should show parents how
to make super porridge:

	YES	NO	RATING	COMMENTS
1. Gather one protein-rich food and two energy-rich foods				
2. Take two parts of the protein-rich food and one part each of the two energy foods				
3. Dry roast these until they are slightly enlarged or popped				
4. Grind the roasted food until it is very fine				
5. Mix these foods together. Store the mixture in a covered pot. Keep rats and insects away from it				
6. Boil a half cup or a full cup of water in a pot. Add one or two handfuls of the mixture to the water. Mix the porridge				
7. Let the porridge cool before you feed it to a child				

Complete your parent
education by:

	YES	NO	RATING	COMMENTS
1. Reviewing the six basic health messages on preventing malnutrition				
2. Involving parents in the demonstration by having them prepare super porridge				
3. Asking parents questions to see if they understood what you told them				
4. Using teaching aids such as pictures or charts				

Unit 2

Diarrhea and Dehydration

STUDENT GUIDE

OBJECTIVES

1. Recognize these signs and symptoms of diarrhea and dehydration:
 - Watery stools
 - Dry lips and mouth
 - Dry and tenting skin
 - Sunken eyes
 - Sunken fontanelle
2. Describe the clinical picture of diarrhea and dehydration.
3. Interview parents and examine infants and children with diarrhea and dehydration.
4. Treat and care for infants and children suffering from diarrhea and dehydration:
 - Calculate the amount of oral rehydration fluids a dehydrated child needs
 - Prepare an oral rehydration solution for a dehydrated child
 - Calculate the amount of intravenous fluid a dehydrated child needs
 - Start and control a peripheral vein or scalp vein IV on an infant or child
5. Teach parents and their families how to prevent and care for diarrhea and dehydration.

LEARNING ACTIVITIES

1. Listen to and observe a presentation on the signs and symptoms of mild, moderate, and severe diarrhea and dehydration.

2. View and discuss a slide presentation about the signs and symptoms of diarrhea and dehydration.
3. Listen to and observe a demonstration on the preparation and use of oral rehydration fluid, and on finding the amount of fluids needed for a dehydrated infant or child.
4. Practice finding the amount of oral rehydration fluids needed for a dehydrated infant or child, and practice making the oral rehydration fluid.
5. Practice delivering health messages about diarrhea and dehydration, explaining how to prepare oral rehydration fluid at home.
6. Join a class discussion about treatment and care for infants and children with diarrhea and dehydration.
7. Outline the treatment and care for an infant or child with diarrhea and dehydration based on case study information.
8. Watch a demonstration of how to start and control an IV on a dehydrated infant or child using the peripheral vein or scalp vein techniques.
9. Practice finding the amount of intravenous rehydration fluid needed by a dehydrated infant or child.
10. For three hours in a clinical setting, assess and care for infants and children suffering from diarrhea and dehydration and counsel mothers about home care and prevention.

2.1 DIARRHEA AND DEHYDRATION

Diarrhea is an intestinal disorder that causes frequent, watery stools. Although diarrhea affects both children and adults, its effect on children usually is more severe. It removes a large amount of water from a person's body.

When a child with diarrhea loses a large part of his body's water supply he becomes dehydrated, or dried out. Dehydration occurs when the body loses more water than it takes in. Diarrhea can cause severe dehydration in a child. Very severe dehydration can kill a child in a few hours. Diarrhea and dehydration are discussed together in this unit because they always occur together.

The most important causes of diarrhea are poor nutrition, weaning, bottle feeding, gastrointestinal infection, diseases, and unclean living conditions. Remember these causes of diarrhea. You can help parents prevent diarrhea in their children by explaining each of these causes.

Poor Nutrition

A child who eats well and is strong can fight off many of the infections that cause diarrhea. If a healthy child has diarrhea, his health will protect him from severe complications. A poorly fed child, however, is often too weak to fight off the infection. The infection itself makes the child weaker. He will have frequent cases of diarrhea. Some of them may be severe.

Weaning

Children often develop diarrhea when their mothers stop breastfeeding them and begin to give them other milk and foods. Breast milk is clean. Other foods, water, and milk formula are often unclean. The young child's body is not able to fight the germs which are present in it. These germs may cause diarrhea.

Bottle Feeding

A mother needs clean, running water and refrigeration to safely feed her child with non-breast milk or formula. Germs from the

bottles of water can grow in the bottle milk. These germs can infect the child, and he will develop diarrhea.

Gastrointestinal Infections

Many kinds of infection cause diarrhea. Gastrointestinal infections come from unclean water, raw fruit and vegetables, undercooked fish and meat, bottled milk, bottles, and many other sources. The young child cannot resist all infections, so the parents must make a special effort to protect their child from them. They can boil all the water they give to their child, wash his cup and spoon with soap, peel his fruit and vegetables, and cook all his food.

Infection from Disease

Diarrhea can occur with many illnesses. For example, children with malaria, otitis media, pneumonia, measles, tonsillitis, and many other diseases can all develop diarrhea.

Unclean Living Conditions

Germs that cause diarrhea live and grow anywhere. They mostly occur in unclean, unsanitary places. These places may be around the house, where animals leave their droppings, or around an unsanitary toilet. They may be where children play.

A young child will put almost anything in his mouth. He will put his fingers in his mouth without washing. He will taste bad food and drink unclean water. All these things that children do introduce the germs that cause diarrhea.

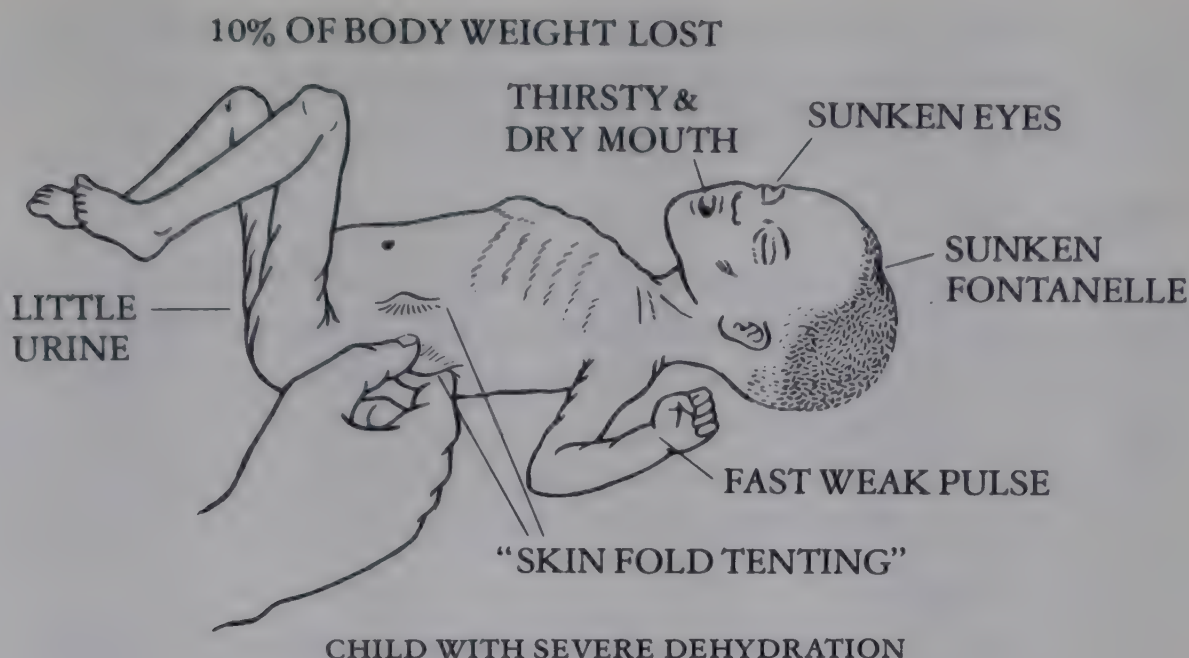
Diarrhea is most dangerous in children less than six years old. Small children use about five times as much liquid per kilogram of their weight per day as an adult. A child with diarrhea, therefore, is much more likely to become dehydrated than an adult.

Some mothers make their children's condition worse by not feeding them and not giving them fluids when they have diarrhea. They think that by not giving the baby fluids, the diarrhea will improve. But the baby gets weaker and may die because he is dehydrated and is not getting enough fluid.

CLINICAL PICTURE

a. Presenting complaint

The mother may tell you that the child has had *five to ten loose stools* during the day.



b. Medical history

Always ask about other illnesses. Remember that children with malaria, measles, otitis media, tonsillitis, pneumonia, and many other illnesses can develop diarrhea. Find out how long the diarrhea has been present. Small infants can become severely dehydrated in a couple of hours. Ask if the child is urinating. The amount of urine a child makes decreases as dehydration develops. With more severe diarrhea, the child stops making urine. The child may have stomach cramps, followed by a watery stool. Mucus or blood may be in the stool. Often, the child is unable to control the stool. He soils his clothing.

c. Physical examination

With mild dehydration, the child becomes *restless* and begins to look sick. His *lips* and *mouth* are *dry*. His *eyes* may begin to look *sunken*.

As the dehydration becomes more severe, the *skin* begins to *tent*, or remain standing up after you pinch it. In the small infant, the *anterior fontanelle* *sinks* inward. The infant stops passing urine.

With severe dehydration, the pulse and respiratory rate increase. Eventually, the child becomes cyanotic and unresponsive.

COURSE AND COMPLICATIONS

A well nourished child can resist the effects of diarrhea better than a poorly nourished child. A malnourished child can become severely

dehydrated in a few hours. These infants may start to convulse and enter a coma. Because of the lack of fluid in the body, the circulatory system begins to fail. Death rapidly follows.

PATIENT CARE

A child with diarrhea loses water and nourishment in his stool. These must be replaced as soon as possible. You can replace them two ways. The best way is by mouth, or “oral rehydration.” The other way is to replace the water and nourishment intravenously. The intravenous, or IV, method is used only when a child is severely ill or cannot take fluids by mouth. See Patient Care Guides and Patient Care Procedures.

Do not give drugs

Do not give drugs unless you are treating the child for a specific condition which requires a drug.

Lower the fever

Lower the patient’s fever by cooling his body with wet towels or sponges. Give aspirin to infants more than one year old. Repeat every four hours while the child has a fever. See Patient Care Guides.

PREVENTION OF DIARRHEA AND DEHYDRATION

You can help prevent diarrhea in children by following these suggestions.

- a. Encourage mothers to breast-feed their infants until the infants are at least two years old.
- b. Convince mothers never to use a feeding bottle.
- c. Encourage mothers to boil all the water they give their infants.
- d. Encourage mothers to wash their hands and their children’s hands after using the latrine and before eating.
- e. Encourage mothers to wash all fruits and vegetables before feeding them to their children, especially if the food is to be eaten raw.
- f. Encourage families to build and use latrines and to keep their houses clean.
- g. Encourage families to follow the six basic nutrition messages.

You can help prevent dehydration in children by following these suggestions.

- a. Teach mothers that diarrhea leads to dehydration.

- b. Teach mothers the signs of diarrhea and dehydration.
- c. Teach mothers how to prepare rehydration fluid, so they can begin to use it as soon as their children develop diarrhea.
- d. Teach mothers to begin giving their children oral rehydration fluid at the first sign of diarrhea.
- e. Urge mothers to continue to breast-feed their infants even when the infants have developed diarrhea.

REVIEW QUESTIONS

Diarrhea and Dehydration

1. Explain the relationship between diarrhea and dehydration.
2. A mother brings a child with diarrhea to your clinic. The child is thirsty but has no other signs of dehydration. How do you manage this problem?
3. If you find a child with diarrhea to be mildly dehydrated, what is the most important management step you can take to provide care?
Circle the letter of the correct answer.
 - a. Stop giving breast milk
 - b. Rehydrate with oral rehydration fluid
 - c. Check stool for worms
4. What ingredients in what amounts are needed to make oral rehydration fluid?

INGREDIENTS	AMOUNT

5. TRUE (T) or FALSE (F)

_____ Children with diarrhea should be encouraged to take food as long as they are able to eat without vomiting.

6. What are the six basic health messages on preventing malnutrition?
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.
7. When you are replacing fluids with an IV and you notice edema of the eyelids, what should you do?
8. Severely dehydrated patients are at great risk. They should be treated at a hospital. If a child with severe dehydration cannot reach a hospital, however, how would you treat him?
9. For each of the areas listed below, describe what you would find when you examine a four-month-old child with severe dehydration.
 - a. Lips and mouth:
 - b. Eyes:
 - c. Fontanelle:
 - d. Skin elasticity:
 - e. Respiration:
 - f. Pulse:
 - g. Urine output

10. What points would you include in a discussion with parents about how to prevent diarrhea?
11. When a moderately dehydrated child is vomiting severely or is severely dehydrated and cannot swallow, intravenous rehydration is necessary. What two techniques could you use?
12. What two complications may occur around the site of the IV needle if it is not properly inserted into the vein?
13. When would the scalp vein IV be used?
14. When giving an IV, if no blood enters a syringe when you pull back on the plunger, what should you do?

REVIEW EXERCISE

Diarrhea and Dehydration

1. Understanding the causes of diarrhea helps families prevent the problem. Each of the following problems has a specific relationship to diarrhea. Briefly explain that relationship.
 - a. Poor nutrition:
 - b. Weaning:
 - c. Bottle feeding:
 - d. Personal and community hygiene:
2. A child is moderately dehydrated. You decide to rehydrate him with intravenous fluids because the child is vomiting. The child weighs 15 kg. Provide the information called for.
 - a. Solution used for rehydration:
 - b. Best site for intravenous:
 - c. Amount of IV fluid to be given immediately:
 - d. Calculate the amount of rehydration solution to give after the first amount:
3. Design a brief message that you might use to teach mothers about preventing dehydration when a child has diarrhea.

4. Parents bring their two-year-old boy to your clinic. The child has had diarrhea for four days. He cries and is restless. His eyes look sunken. He has twenty-five respirations per minute, and his pulse is 110 beats per minute. His lips are dry. His skin is dry but it does not tent when it is pinched. His mother said her boy has been very thirsty, but he has not passed much urine. What level of dehydration is the child experiencing? Describe how you would rehydrate him.

REVIEW EXERCISE

--- Case Study 33 ---

Name of Patient:	Baro, Avis
Sex:	Male
Date of Birth:	8 March 1978
Date of Visit:	3 November 1978
Vital Signs:	Temperature 38°C Pulse 110 Respirations 30 Weight 4.2 kg
Presenting Complaint and Medical History:	<p>The mother says her child has been vomiting for one day.</p> <p>The child was well until yesterday when he suddenly started to vomit. The mother stopped feeding the child. He has had a little fever, and two loose stools today.</p>
Family History:	<p>The rest of the family is healthy. The patient is the youngest of four children. The oldest child is five years old.</p> <p>His immunizations include BCG, and three doses of DPT.</p>
Physical Examination:	<p>The child looks ill, with signs of dehydration. He is irritable, his mucous membranes are dry, his tongue is dry, and his skin is dry with tenting. The boy's tonsils look normal. His breath sounds are normal, his heart sounds are good, and his abdomen is soft and without tenderness. The child's anterior fontanelle is closed.</p>

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most useful in making the diagnosis?

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3. Was any information missing from the case study that would have helped you make the diagnosis?
4. What treatment would you give this patient?
5. What advice would you give the mother of the child?

SKILL CHECKLIST

Preparation and Use of Oral Rehydration Fluid

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students prepare and use oral rehydration fluid.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
2 = Needs improvement
3 = Satisfactory
4 = Above average
5 = Excellent

To prepare and use oral rehydration fluid, follow these steps:

	YES	NO	RATING	COMMENTS
1. Explain to the patient or his parents what you are going to do and why				
2. Boil about a liter of water				
3. Stir one two-fingered pinch of salt, one two-fingered pinch of bicarbonate of soda, and two fistfuls of sugar in the boiling water				
4. If no soda can be found, use two pinches of salt				
5. Or, if oral rehydration packets are available, mix one packet with one liter of clean, boiled water				

	YES	NO	RATING	COMMENTS
6. Feed a mildly dehydrated child as much oral rehydration fluid as he is able to take between breast feedings				
7. Feed children who are not breast-fed and are mildly dehydrated oral rehydration fluid about every three hours. Give them as much as they are able to take				
8. Calculate the least amount of oral rehydration fluid that a moderately dehydrated child should take in two hours. Follow these steps: a. Weigh the child				
b. Multiply his weight in kilograms by 20 ml				
c. Your answer is the least amount of oral rehydration fluid a moderately dehydrated child should take in two hours				
9. After two hours, replace the amount of fluid he loses in his stool with an equal amount of oral rehydration fluid				

SKILL CHECKLIST

Scalp Vein Intravenous Rehydration

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students give a dehydrated child fluids intravenously through a scalp vein.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

To give fluids intravenously to a dehydrated child, follow these steps:

	YES	NO	RATING	COMMENTS
1. Wrap the child in a sheet, blanket, or towel. Be careful not to restrict his chest movement				
2. Lay the child down and have an assistant hold him				
3. Put supplies within easy reach. Precut the tape				
4. Shave the scalp over the vein you have selected. This is usually the vein above the ear				
5. Clean the shaved scalp with antiseptic or soap and water. Wash with circular movements away from where you will put the infusion				

	YES	NO	RATING	COMMENTS
6. Make a tab of adhesive tape for the rubber band so you can pull it up easily. Place the rubber band tourniquet around the child's head, with the tab near the place where you will put the IV needle				
7. Flush and fill the butterfly tubing with normal saline, leaving the syringe attached				
8. Stretch the child's skin and insert the needle about 1 cm below the desired point of entry into the vein				
9. Gently press the needle into the vein. Blood should appear in the tubing, but if it does not, pull slightly on the syringe plunger				
10. When you see blood in the tubing, pull up on the rubber band and cut it. Slowly inject .5 cc saline fluid to clear the tubing. Check to be sure that the needle is in the vein. Do not attempt to thread the needle further into the vein. This usually tears the vein and causes a hematoma				
11. Secure the needle where it enters the skin with a 2 cm to 3 cm piece of tape				
12. Loop a 7 cm to 8 cm piece of tape under the butterfly wings for support if the needle and wings are not on a flat surface				
13. Gently insert cotton or a two-square-inch sterile gauze pad under the wings for support if the needle and wings are not on a flat surface				

	YES	NO	RATING	COMMENTS
14. Loop the tubing once or twice and secure it with tape				
15. Flush the tubing again with .5 cc to 1 cc of normal saline. Watch the skin over the point of the needle to see if it swells				
16. Remove the syringe from the butterfly tubing				
17. Connect the IV infusion set to the tubing and regulate the desired flow				
18. You may cover the butterfly with a notched paper cup for protection				
19. Check the infusion every two hours for signs of infiltration or hematoma				
20. Follow procedures for calculating the intravenous fluid needs of a dehydrated child				

SKILL CHECKLIST

Peripheral Vein Intravenous Rehydration

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students give a dehydrated child fluids intravenously through a peripheral vein.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

To give a dehydrated child fluids intravenously through a peripheral vein, follow these steps:

	YES	NO	RATING	COMMENTS
1. Lay the child down in a comfortable position				
2. Restrict the child's movement. Use a sheet or towel				
3. Put your supplies within easy reach. Precut a 2 cm to 3 cm piece of tape and a 7 cm to 8 cm piece of tape				
4. Select an area on the child's arm or leg where the veins are easy to see. Veins usually are easy to see at the back of the forearm or at the ankle				
5. Use an arm board to hold the joint nearest the vein from moving. Place adhesive tape around the limb and board above and below the joint				

	YES	NO	RATING	COMMENTS
6. Clean the skin over the vein with alcohol or wash it with soap and water				
7. Place a tourniquet around the upper arm or below the knee. This will stop the flow of blood in the veins, causing the veins to puff up. The vein will be more easily seen and punctured. If the veins are still difficult to see or feel, place a warm cloth over them or gently pat the area				
8. Connect a bottle of 5% dextrose in Ringer's Lactate to the IV tubing				
9. Fill the IV tubing with intravenous fluid from the bottle				
10. Make your first puncture of a vein as far from the heart as possible. Hold the needle you will place in the vein with the hole facing up. Stretch the skin over the vein you have chosen. Put the needle through the skin about 1 cm below the point where you want to enter the vein				
11. Gently press the needle into the vein. Blood should fill the needle's opening. If you do not see blood, gently reposition the needle				
12. When you see blood in the needle's opening, attach the tubing to the needle. Carefully release the tourniquet. Slowly run .5 cc to 1 cc of fluid into the vein to check that the needle is in the vein. If the				

	YES	NO	RATING	COMMENTS
area around the needle swells, remove the needle and start again further up the vein				
13. Fasten the needle where it enters the skin with a 2 cm to 3 cm piece of tape				
14. Loop a 7 cm to 8 cm long piece of tape under the IV needle with its adhesive side up. Fold each end of the tape diagonally across the needle to hold it in place				
15. Loop the tubing once or twice. Fasten it to the arm or ankle with tape. The tape should not go all the way around the arm or ankle				
16. Run another .5 cc to 1 cc of fluid into the tube to be sure the needle is still in the vein				
17. Regulate the flow				
18. For moderately dehydrated children who are vomiting severely, give an amount of fluid in milliliters equal to the child's weight in kilograms times twenty. Run this quickly into the vein				
19. After giving the first amount of fluid, slow down the IV. You may give too much fluids intravenously. If the child's eyelids swell, take the IV needle out of his vein. For a severely dehydrated child, run in the first amount and examine the child. If you see no signs of improvement, run in the same amount again in thirty minutes				

	YES	NO	RATING	COMMENTS
20. Watch the child for signs of improved rehydration				
21. When the severe vomiting stops and the child can take fluids by mouth, remove the IV needle from his vein. Give him oral rehydration fluid				

Unit 3

Problems of the Newborn

STUDENT GUIDE

OBJECTIVES

1. Recognize these symptoms and signs of problems of newborn:

Inability to suck

Fever

Jaw spasms

Trouble breathing

Rigid posture

Crying and irritability

Fits or convulsions

Weakness

Redness or foul odor
around the umbilical
stump

Red, pussy eyes

White or gray patches
on the tongue and
mucous membranes
of the mouth

Jaundice

Vomiting

2. Describe the clinical picture for these problems of the newborn:

Tetanus

Gonococcal conjunctivitis

Septicemia

Thrush

3. Interview parents and examine infants and children with these problems.
4. Treat and care for infants with these problems. Feed infants with a nasogastric tube.
5. Teach parents and their families how to prevent and care for problems of the newborn.

LEARNING ACTIVITIES

1. Prepare and present information about a problem of the newborn.
2. Work with other students in small groups to practice diagnosing and planning treatments for newborns with problems based on case studies.

3. Join a discussion of case studies.
4. Listen to and observe a presentation about how to express breast milk.
5. Practice making presentations about how to express breast milk.
6. Join a discussion about the treatment and care of the newborn with problems and parent education about problems of the newborn.
7. In a clinical setting, observe and discuss a demonstration of feeding an infant through a nasogastric tube.
8. Work with other students in a small group to prepare and present a health message for parents and families about problems of a newborn.

3.1 TETANUS OF THE NEWBORN

Tetanus is caused by bacteria which produce a deadly poison. The bacteria grow in unsanitary conditions and can be carried on unwashed hands and unsterile equipment. For example, a newborn may develop a tetanus infection if his umbilical cord is cut with an unsterile knife or handled with dirty hands. Circumcisions done with unsterile equipment or in unsanitary conditions may also cause tetanus infections. The infection usually kills the infant.

CLINICAL PICTURE

a. Presenting complaint

The infant will be *unable* to *suck*. He becomes stiff and develops *convulsions*.

b. Medical history

The *umbilicus* may have been cut or a *circumcision* performed with *unclean instruments*. In about one week, the infant will begin to have *trouble sucking* at the *breast*.

c. Physical examination

The infant with a tetanus infection will be unable to suck. He will make nervous, jittery movements. Muscles in his *jaw* will *spasm*.

The nervous, jittery movements develop into fits or *convulsions*. The fits become more frequent as the infection spreads. They are set off by a noise or by handling of the infant. The fits interfere with the infant's breathing. Muscle spasms hold the infant's *body rigid*.



AN INFANT WITH TETANUS INFECTION

COURSE AND COMPLICATIONS

Infants with tetanus infections usually die from pneumonia or severe convulsions. A few infants can be saved by very skilled nursing care in a hospital.

PATIENT CARE

Give the infant with a tetanus infection immediate care. Give him 200,000 units procaine penicillin IM. Also give him 15 mg phenobarbital IM. Immediately transfer the patient to a hospital. See Patient Care Guides.

While transferring the infant to a hospital, the mother should hold the baby in her arms so that he will not inhale saliva into his lungs.

PREVENTION

You can prevent tetanus in the newborn in three ways.

- a. Provide sterile equipment at deliveries. Teach attendants to wash their hands and use sterile instruments. Explain to them why they should. Show them how to apply clean dressings to the umbilical cord stump.
- b. Provide sterile equipment at circumcisions. Explain to those who perform the operation why instruments must be boiled. Teach them to apply clean dressings to the penis.
- c. Give every pregnant woman tetanus toxoid intramuscularly during the last three months of her pregnancy. Give her two injections four to six weeks apart. See Patient Care Guides. The injections will give the infant protection against tetanus in the early months of life.

3.2 SEPTICEMIA IN THE NEWBORN

Septicemia is a deadly bacterial infection of the blood. Septicemia blood poisoning develops when an improperly cared for umbilicus becomes infected or when a pregnant woman's water bag breaks early.

CLINICAL PICTURE

a. Presenting complaint

The infant with septicemia is very sick. Ask the parents whether their infant:

Does not suck well

Vomits

Has fever or low temperature

Has difficulty breathing

Has fits or *convulsions*

Cries often or is very irritable

Seems weak and floppy

b. Medical history

Ask about the mother's pregnancy and the infant's delivery. Ask whether the mother's water bag broke more than twelve hours before delivery. Ask the mother whether the umbilicus was cut with clean scissors or razor. Ask her whether the umbilicus was dressed with clean cloth.

c. Physical examination

Examine the infant's *umbilical stump*. Look for any *redness* or *foul odor*. Check the infant for:

Jaundice

Drowsiness or weakness

Irritability

Trouble breathing or signs of pneumonia

Fever or low body temperature

Two or more of these signs should warn you of septicemia.

COURSE AND COMPLICATIONS

Septicemia causes meningitis, pneumonia, and infections of the bone or kidneys. It has a rapid course. Death quickly follows.

PATIENT CARE

a. Give an antibiotic

Immediately start the infant with septicemia on antibiotics. Give him ampicillin every six hours. See Patient Care Guides.

b. Refer to hospital

Send the infant to a hospital by the fastest means you have. Infants with septicemia are at great risk of death.

c. Keep the infant warm

Keep the infant warm. Wrap him tightly in a blanket.

d. Feed the child

If you cannot immediately send the child to a hospital, feed him. Help the mother express her milk if the child is unable to suck. You can give the infant milk every three hours by way of a nasogastric tube. If the mother cannot provide more than 50 ml milk, add a 10% glucose solution. See Patient Care Procedures.

PREVENTION

You can prevent septicemia by providing proper care of the infant's umbilical stump. Train traditional birth attendants to cut and tie the umbilical cord with clean hands and instruments.

Provide care of the umbilical stump during the infant's first week of life. The cord stump must be exposed to air to stay dry. Paint the infected stump with gentian violet or 70% alcohol twice a day. See Patient Care Guides.

Follow up infants who are at increased risk of infection. These are infants who are born after a long and difficult delivery, infants with low weight at birth, and infants whose mothers' bag of water broke more than twelve hours before delivery.

3.3 GONOCOCCAL CONJUNCTIVITIS OF THE NEWBORN

A pregnant woman with gonorrhea will infect her infant during birth. The infection causes blindness.

CLINICAL PICTURE

a. Presenting complaint

The infant's eyes become *red* and develop a *pussy discharge* within two to five days after birth.

b. Medical history

The mother may not know that she has *gonorrhea*. Her infant will not have had eye care after birth.

c. Physical examination

The conjunctiva of the infant's eyes will be *inflamed*. Look for a *pussy discharge*.

COURSE AND COMPLICATIONS

Gonococcal conjunctivitis rapidly worsens. Corneal ulcers develop, and soon blind the infant.

PATIENT CARE

a. Flush the eye

Make a salt solution by boiling half a liter of water. Add a pinch of salt. Let the water cool, then flush the eye with the solution. Begin on the inner, or nose-side of the eye and wash toward the ear to prevent germs from washing into the opposite eye. See Patient Care Procedures.

b. Give eyedrops

Put eyedrops or eye ointment into the infant's eyes. Use penicillin eyedrops or ointment. Repeat the application every two hours because the discharge of gonococcal conjunctivitis rapidly washes out the medicine. See Patient Care Guides.

c. Give penicillin

Give penicillin IM every twelve hours for four days. See Patient Care Guides.

d. Follow the infant's progress

Follow the infant's progress, frequently checking for signs of corneal ulcers. Refer the infant to a hospital if you see any sign of a corneal ulcer.

e. Treat the parents

Treat both parents for gonorrhea.

PREVENTION

Two drops of 1% silver nitrate solution put into newborns' eyes at birth will prevent gonococcal conjunctivitis. Teach birth attendants this procedure. See Patient Care Guides.

3.4 THRUSH IN THE NEWBORN

Thrush is a fungus infection. Most people carry the fungus, but it sometimes grows in abnormal amounts. Some newborn are infected by the fungus in their mother's birth canal.

CLINICAL PICTURE

a. Presenting complaint

A mother may notice *white patches* in her infant's *mouth*. The infant may *suck poorly*.

b. Medical history

The mother may have complained of an itchy vaginal discharge. She may have raw, red, weepy skin lesions around her vagina. More often, she has had no symptoms of fungus infection. Infants and children who have been treated with *antibiotics* for another infection often develop thrush.

c. Physical examination

Look for *white* or *gray patches* on the tongue and mucous membranes of the *mouth*. These patches may run together. Scraped off, they leave a raw, bleeding mucous membrane.

COURSE AND COMPLICATIONS

In severe thrush infections, the white patches will spread to the back of the infant's throat. Because they are painful, the patches may interfere with the infant's eating, drinking, and even breathing.

PATIENT CARE AND PREVENTION

- a. Good nutrition will help restore control of the thrush fungus. Recommend regular feedings. Give extra fluids to prevent dehydration.
- b. Paint the white patches of thrush with 1% gentian violet three times a day to dry the lesions. Nystatin is also very effective. See Patient Care Guides.
- c. If the mother has a vaginal or skin infection, treat her.
- d. Remember not to use antibiotics unless absolutely necessary. Antibiotics kill many normal bacteria and allow the thrush fungus to grow without control.

REVIEW QUESTIONS

Problems of the Newborn

1. How does tetanus bacteria infect newborns?
2. What signs would tell you whether a newborn with tetanus has fits or convulsions? What starts the fits? What would you expect the newborn's physical appearance to be?
3. What two things can you do to prevent the development of tetanus in a newborn?
 - a.
 - b.
4. Septicemia is an infection in the blood caused by bacteria. Name one way the bacteria that cause septicemia enter the blood stream of a newborn.
5. How would you describe the usual clinical picture of a newborn with septicemia? What is the general appearance of the infant? In what condition would you find the umbilical stump?

The infant with septicemia:
6. What would be your first decision in caring for the infant diagnosed as having septicemia?

7. How can septicemia in a newborn be prevented?
 - a.
 - b.
 - c.
8. What are the four major procedures for caring for gonococcal conjunctivitis in a newborn?
 - a.
 - b.
 - c.
 - d.
9. How can gonococcal conjunctivitis be prevented?
10. A mother may notice white patches in her infant's mouth. The infant may suck poorly because of pain. What do these signs indicate?
11. Why should you not use antibiotics to treat thrush unless absolutely necessary?
12. When treating an infant for thrush, why would you:
 - a. paint white patches in the mouth with 1% gentian violet three times a day?
 - b. give the infant extra fluids?
13. Explain how thrush can lead to malnutrition and dehydration.

REVIEW EXERCISE

Problems of the Newborn

1. Outline the immediate care you would give to an infant with tetanus before transferring him to a hospital.
 - a.
 - b.
2. What message would you give a mother to help prevent septicemia of her newborn?
3. Consult your Patient Care Guides to determine which antibiotic and what dosage to give a 3 kg infant who has septicemia.
4. How would you explain to a mother the reason why her infant has gonococcal conjunctivitis?
5. Complete the following chart on problems of newborn.

PROBLEM	MAJOR CAUSES	BASIC CARE	PREVENTION MEASURES
Tetanus			
Septicemia			
Gonococcal conjunctivitis			
Thrush			

REVIEW EXERCISE

Case Study 34

Name of Patient:	Kelar, Jane
Sex:	Female
Date of Birth:	1 June 1981
Date of Visit:	21 June 1981
Vital Signs:	Temperature 39° C Pulse 150 Respirations 48 Weight 2.97 kg
Presenting Complaint and Medical History:	<p>The infant's mother says her child has been vomiting since morning. The child was healthy until about three days ago when the mother noticed the infant was turning yellow. The night before coming to the clinic, the infant had a fit which lasted about five minutes. She is not feeding well at the breast and has vomited twice already today.</p> <p>The child had a full term delivery. The record shows no family history of jaundice in early life.</p>
Physical Examination:	<p>The infant looks very ill and listless. Her anterior fontanelle bulges. Her mucous membranes are pink. Her sclera have a yellow tint. Her tongue is coated. No rales heard. Her abdomen is distended. Bowel sounds are present. A pussy discharge comes from the umbilicus. The umbilical stump is wet and red.</p>

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most useful in making the diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. What treatment would you give this patient?
5. What advice would you give the mother of the child?

REVIEW EXERCISE

Case Study 35

Name of Patient:	Ki, Dana
Sex:	Male
Date of Birth:	2 August 1981
Date of Visit:	10 October 1981
Vital Signs:	Temperature 37°C Pulse 92 Respirations 24 Weight 3.6 kg
Presenting Complaint:	<p>Infant's mother says he has not been eating well for the past five days.</p> <p>The child seemed fine until about one week before the visit. The mother noticed that her child was not taking milk from her breast as well as before. The problem worsened. He has had no other symptoms except that he drools and is irritable. He has had no immunizations yet.</p>
Physical Examination:	<p>The infant is irritable but in no acute pain. His mucous membranes are pink with white patches on the cheeks and back of his tongue. The back of his throat is red. The child's mouth waters a lot. His chest is clear. No lesions are visible on his skin.</p>

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most useful in making the diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. What treatment would you give this patient?
5. What advice would you give the mother of the child?

SKILL CHECKLIST

Teaching Mothers How to Express Breast Milk

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students teach mothers how to express breast milk.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When you teach a mother how to express breast milk, you should:

	YES	NO	RATING	COMMENTS
1. Find a comfortable, private location				
2. Sterilize a cup or bowl by boiling				
3. Explain to the mother the importance of breast-feeding a sick child and the need for maintaining her supply of milk				
4. Answer any questions or concerns the mother may have about breast-feeding her infant				
5. Tell the mother to wash her hands with soap and water				
6. Show the mother how to hold up her left breast with her left hand. Teach her to press her breast towards the nipple with her right hand				

YES NO RATING COMMENTS

7. Show the mother how to squeeze the part of the breast behind her nipple. Teach her to use her thumbs and first and second fingers to do this				
8. Teach the mother to continue to milk her breasts for about ten minutes. By that time, all the milk will be expressed. Tell her to press all over each breast, especially any parts that feel hard				
9. Instruct the mother to feed her baby using a clean cup and a clean spoon. Tell her to throw away any milk that the baby does not use				
10. Have the mother demonstrate what you have taught her				
11. Tell her to continue expressing milk until her infant can breast-feed again				

SKILL CHECKLIST

Feeding a Baby by Nasogastric Tube

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students feed a baby by a nasogastric tube.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When you feed a baby by
 nasogastric tube:

	YES	NO	RATING	COMMENTS
1. Gather a nasogastric tube, lubricant, clamp for tubing, towel, basin, expressed breast milk or formula, 20 cc syringe, and a blanket				
2. If the infant is very small, wrap it firmly in a blanket to prevent it from moving too much				
3. Lay the infant on its back				
4. If feeding a child, ask him to sit up and hold his head forward				
5. Measure a length of the tube needed to reach from the mouth to the umbilicus. Mark this length with tape. Leave about 15 cm from the tape to the open end of the tube				

	YES	NO	RATING	COMMENTS
6. Inspect the tube. Make sure it is clean and not blocked				
7. Lubricate the end of the tube. Place the end of the tube into the nostril and push it gently backwards. Hold the end of the nose up as you do this				
8. Push the tube into the nostril gently. If the child gasps or becomes cyanotic, immediately remove the tube. These signs mean the tube is going into the trachea instead of the esophagus				
9. When the end of the tube has reached the stomach, attach the syringe and pull the plunger. If fluid enters the syringe, the tube is in the stomach. The tape on the tube should be at the child's nose				
10. Empty any fluid from the syringe. Draw up the milk or formula you will give the child. Attach the syringe to the end of the tube again and gently push the plunger in letting the milk flow into the tube. Watch for any signs of cyanosis or difficulty breathing. If you see either sign, the tube is in the trachea. Remove it immediately.				

Unit 4

Common Infections of Children

STUDENT GUIDE

OBJECTIVES

1. Recognize these symptoms and signs of the common infections of children:

- Hoarseness
- Barking cough
- Stridor
- Trouble breathing
- Intercostal retractions
- Thick, sticky mucus
- Runny nose, cough, fever, and choking combined
- Whooping
- Measles rash
- Red conjunctiva
- Red throat
- White spots on the lining of the cheeks
- Enlarged parotid gland
- Swelling and tenderness at the angles of the jaw
- Chicken pox rash

2. Discuss the clinical picture for these common infections of children:

- Croup
- Whooping cough
- Measles
- Mumps
- Chicken pox

3. Interview parents and examine children with these problems.
4. Treat and care for children with these problems.
5. Teach parents and family members how to prevent and care for these common infections.

LEARNING ACTIVITIES

1. Listen to and discuss a presentation on the signs and symptoms of croup, whooping cough, measles, mumps, and chicken pox.
2. View and discuss a slide presentation showing the clinical picture and complications of measles.
3. Work with two other students in role-playing an interview with the parents of a sick child, using a case study as a source of information.
4. Discuss how to interview parents and make diagnoses.
5. Work with the same two students as before to outline the treatment and care you would give the child in your case study.
6. Practice designing health messages on the home care and prevention of common infections of children.
7. Practice delivering health messages.
8. Practice finding the kinds of drugs and dosages you would give to infants and children suffering from disease.

4.1 CROUP

Croup is a viral or bacterial infection which usually involves the middle portion of the airway. Infection swells the larynx and epiglottis. These swollen tissues can block the breathing passage. Croup usually affects children younger than three years old.

CLINICAL PICTURE

a. Presenting complaint

The child may have had a *cold* and *sore throat* which *suddenly worsened*.

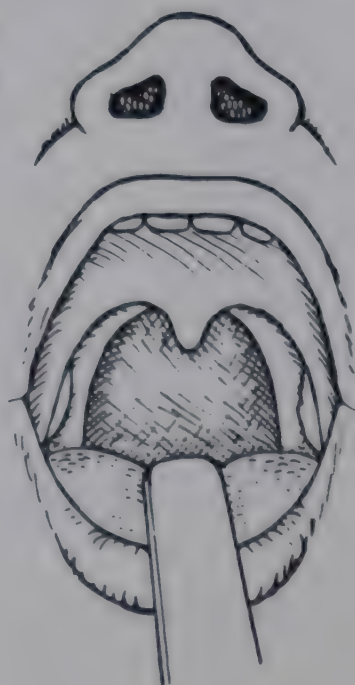
b. Medical history

Find out how long the child has had an upper respiratory infection. Also, find out how the upper respiratory infection affected the child. He may develop *hoarseness* and a *barking cough*. He may also develop dyspnea, or *trouble breathing in*.

c. Physical examination

Listen for *stridor*, the harsh, usually loud sound made by air rushing through the swollen upper airway when a patient with an upper respiratory infection inhales. The child may have *difficulty breathing*. Look for *intercostal retractions*.

During a throat examination with a tongue blade, stimulation of the swollen epiglottis may cause a sudden spasm of the larynx and asphyxia. For this reason, use extreme care when examining the throat of a child who has croup.



COURSE AND COMPLICATIONS

Croup almost always improves in less than one day. In some cases, however, swollen tissues completely block the airway. Swollen tissues can choke and suffocate a child. If you find the epiglottis red and swollen during your examination and you suspect the swelling may block the child's airway, immediately send him to a hospital.

PATIENT CARE

Unless the child's parents use a dung or wood fire for cooking, suggest that the child breathe vapors from a pot of steaming water. Be sure to tell the parents to be very careful that the child is not burned by the vapors or the steaming water.

Encourage the child to drink extra fluid. The parents should spoon-feed the child or give him a glass of fluid every three hours.

Croup cannot be prevented.

4.2 WHOOPING COUGH

Whooping cough, or pertussis, is a serious bacterial infection. It usually affects the respiratory system of children younger than nine years old. The infection produces a very thick mucus in the nose, throat, trachea, and bronchi.

Whooping cough begins with a cough, runny nose, and mild fever. These symptoms last about two weeks before the mucus thickens and the whooping begins.

The cough comes in attacks. The typical cough is very long, lasting until the child is out of breath. As the child tries to regain his breath after an attack of coughing, he makes a whooping sound on inspiration.

During attacks of whooping cough, the child may vomit. He may also have nose bleeds and blood in the sputum he coughs up. This stage of the disease lasts from eight to twelve weeks.

Infants do not usually have the whoop or cough that distinguish this disease. The thick mucus, however, still builds up in the nose, throat, trachea, and bronchi. This mucus can choke an infant. The infant becomes cyanotic and may die. Most deaths from whooping cough occur when infants choke on their mucus.

CLINICAL PICTURE

a. Presenting complaint

The parents of an infant with whooping cough will tell you their child is having *trouble breathing* because of his cold. He may *choke* on his *mucus* and *vomit*.

b. Medical history

The disease starts with the symptoms and signs of a mild cold. After about two weeks, the mucus starts to thicken and the *whooping* begins.

Because whooping cough is very contagious, many children who live in the same area or go to the same school will have the disease at the same time.

c. Physical examination

Examine the child's nose and throat. Look for signs of the *thick mucus*. Examine the sputum for blood. Note the sign of any *whooping*.

COURSE AND COMPLICATIONS

Whooping cough may last as long as three months. Children who have it may lose weight because they vomit up whatever food they eat. They risk malnutrition.

Whooping cough can also lead to pneumonia. Infants may choke on the thick mucus whooping cough produces.

PATIENT CARE

a. Prevent choking

Tell the mother to watch her infant at night. Lay him on his side. If he has a severe coughing spell, hold him with his head down and pat him on the back to make him cough up mucus. This may help prevent choking.

b. Breast-feed the infant

Infants become very weak from coughing and vomiting. Feed them more often than you normally would. Between breast milk feedings, give them cool water that has been boiled.

c. Feed children often

As infants do, children will also vomit and lose weight. Give them

soft food. Feed them more frequently than usual with small portions of food.

d. Check for pneumonia

If a child develops signs of pneumonia, treat him for this problem. See Patient Care Guides.

- e. Give the child with whooping cough 50 mg ampicillin for each kilogram of his body weight each day for seven days. Give the daily dose in divided amounts during the course of the day. See Patient Care Guides. Ampicillin will not shorten the course of the disease, but it will kill the bacteria which causes whooping cough and it may prevent other complications.

PREVENTION

A course of diphtheria, pertussis and tetanus (DPT) immunizations, given in early infancy, will prevent this infection.

4.3 MEASLES

Measles is a viral disease. It spreads quickly, especially among children who have close contact. An infected person's sneezing and coughing spreads the disease. Nearly all children in a community and most adults who have not had measles before will catch it. The spread of measles can become epidemic.

Measles affects poorly nourished and weak children most severely. They can die from complications such as pneumonia or dehydration due to diarrhea.

You can prevent a measles epidemic by vaccinating children against it.

CLINICAL PICTURE

a. Presenting complaint

Parents will tell you of a *rash* forming on their child's *face*. The rash may already be *spreading*.

b. Medical history

The child will have been ill before his rash broke out. His parents

may tell you the child has had a *fever*, *runny nose*, *red eyes*, and *cough*. After three days of these symptoms and signs, the measles *rash* will have broken out on the child's *face*.

You may already have noted that a measles virus is spreading through the community.

c. Physical examination

Measles begins like a bad cold. The patient has a *fever*, *runny nose*, *red eyes*, and a *cough*. He feels sick. On the second or third day, small, *white spots* on a red base form on the *inside* of the *cheeks*.

On the third or fourth day, a *rash* forms on the *face* and quickly *spreads* over the entire body. At first, the rash occurs in spots, but in a few days, the spots begin to run together. In mild cases, the measles rash begins to fade within two to three days after it first formed. Then the skin begins to peel.

COURSE AND COMPLICATIONS

Complications of measles are common and serious. These complications most often occur among infants and children who are malnourished:

- High fever and convulsions
- Pneumonia
- Croup
- Diarrhea, vomiting, and dehydration
- Otitis media
- Tuberculosis

PATIENT CARE

Give the patient plenty to eat and drink. Mothers must breast-feed their children as often as possible. Children must have soft foods like milk, eggs, and porridge. They should not eat greasy or spicy foods. Encourage children to drink fluids at least every one to two hours.

Examine the patient with measles at least once a day until his rash and fever begin to fade. Frequent examinations will help guard the patient against complications. Treat any complications. See Patient Care Guides.

For high fever, give aspirin six times a day, as needed. See Patient Care Guides.

For fever over 39°C, give sponge baths for fifteen to twenty minutes

every two to four hours. This is especially important for children less than five years old.

If children have mouth sores that prevent them from sucking or eating hard foods, give them soft foods and plenty of fluids. Infants may need nasogastric tube feedings. If so, refer them to a hospital.

Also refer to a hospital any children who have:

- A very dark rash over large areas of the body
- Large areas of flaking skin
- Diarrhea and dehydration
- Convulsions
- Severe malnutrition

Send any unconscious child or child who has trouble breathing to a hospital immediately.

PREVENTION

Measles vaccine can protect people from the disease. Give the vaccine to all children when they are between nine and twelve months old. Children less than six years old who have not already had measles and have never been vaccinated against it, should also be given the vaccination.

People who already have had measles will not catch it again. People who have the measles vaccine will not get measles.

If a child in your community has measles, tell your supervisor so a vaccination program can be started.

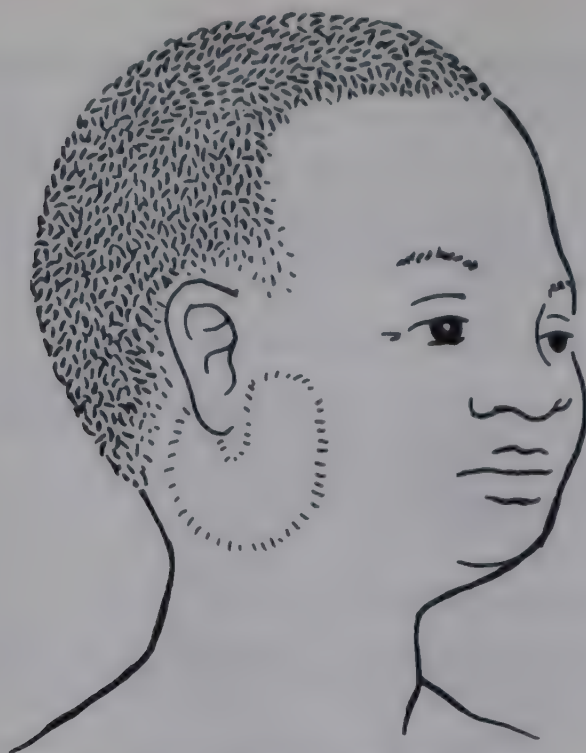
4.4 MUMPS

Mumps is a virus infection of the parotid salivary glands. These glands are located on either side of the face, below the ears. Nearly all people have a mumps virus infection when they are children. This infection permanently protects them from reinfection.

CLINICAL PICTURE

a. Presenting complaint

Parents will tell you their child complains of *pain* when *chewing*. The *swelling* of their child's *jaws* may also concern them.



A CHILD WITH MUMPS

b. Medical history

Fever and amount of illness vary. The child will *not have had mumps before*.

c. Physical examination

The *parotid* salivary glands will be *swollen, tender*, and firm. One gland often swells for several days before the other. The *swelling* and *tenderness* occur at the *angle* of the *jaw*. The swelling lifts the ear lobe upwards and out. Symptoms are gone in five to seven days.

COURSE AND COMPLICATIONS

Serious complications are very rare but a child with mumps can develop meningitis.

PATIENT CARE

No treatment can cure a child with mumps. Make the child comfortable. Give him aspirin for pain, rest, and fluids to drink. Feed him soft and liquid foods. Warm, moist towels may relieve discomfort of the swelling.

4.5 CHICKEN POX

Chicken pox is a virus disease common in children. It is usually not very serious. Because chicken pox is passed from one child to another very easily, it usually occurs in epidemics. Most children living in the same community get chicken pox at the same time.

CLINICAL PICTURE

a. Presenting complaint

The child develops a *red rash* on his *chest* and *abdomen*.

b. Patient history

The child may have had a mild headache, loss of appetite, and some fever.

c. Physical examination

Chicken pox is most commonly recognized by the skin rash it causes. The *rash* begins as red macules which become *vesicles*, then pustules with *scabs*. Several stages of the rash occur at the same time. Most of the lesions will be on the *chest* and *abdomen*. Rarely do the lesions occur on the palms of the hands or the soles of the feet. The rash heals completely in about ten days.

COURSE AND COMPLICATIONS

Because the rash itches, children will often scratch. Scratching may cause infection. Poorly nourished children risk pneumonia and meningitis.

PATIENT CARE

No treatment will cure chicken pox. However, it is possible to prevent the rash from becoming infected by washing the child's skin with soap and water.

If the child develops impetigo and fever, give him procaine penicillin IM twice daily. For mild impetigo, treat with warm soaks. See Patient Care Guides.

REVIEW QUESTIONS

Common Infections of Children

1. If you must examine the throat of a child with croup, explain why you should examine it with extreme care.
2. What instructions should you give a mother to help her care for her child who has croup?
3. Explain why a few children with whooping cough coming to your clinic should make you expect the number of cases to increase.
4. Whooping cough has two stages. The second stage is the whooping cough stage that can last for ten to twelve weeks.
 - a. How long will the first stage usually last?
 - b. What signs and symptoms occur during the first stage?
5. Why is malnutrition a complication of whooping cough? What instructions would you give a parent about feeding a child with whooping cough?
6. How can you prevent whooping cough?

7. Describe what signs and symptoms you might see in a child during the first several days of measles.

Day 1:

Day 2:

Day 3:

Day 7:

8. Explain how you would care for a child with measles who develops a high fever.
9. What complication should you watch for during the early stages of measles?
10. What can be done to prevent measles?
11. Mumps is a virus infection of the salivary glands. What clinical signs does this infection cause?
12. Although serious complications of mumps are rare, what complication can occur in a child with mumps?

13. How can you care for a child with mumps?

14. Another disease in children which is caused by a virus is chicken pox. What are the differences between the clinical pictures for chicken pox and measles?
 - a.
 - b.
 - c.

15. The care of skin lesions is the primary consideration when treating chicken pox. Describe the treatment of:
 - a. Non-infected lesions:
 - b. Infected lesions:

REVIEW EXERCISE

Common Infections of Children

1. Fill in the missing information on this chart of common infections of children.

PROBLEM	CLINICAL PICTURE			
	CAUSE	MAJOR SIGNS & SYMPTOMS	TREATMENT	PREVENTION
CROUP				
WHOOPING COUGH				
MEASLES				
MUMPS				
CHICKEN POX				

REVIEW EXERCISE

Case Study 36

Name of Patient: Dexter, Paul
Sex: Male
Date of Birth: 7 November 1975
Date of Visit: 18 April 1980
Vital Signs: Temperature 37.7°C
Pulse 95
Respirations 28
Weight 15.7 kg

Presenting Complaint and Medical History: The boy's mother says her child has had a chest cold for the past week and that now he has begun to have attacks of coughing. He coughs up thick, sticky white mucus. Sometimes his food comes up after an attack. The cough ends with a high noise. The coughing attacks exhaust him.

The boy was full term, normal delivery. At birth he weighed 2.9 kg. He had measles at four years of age.

The mother did not bring the boy's immunization record with her.

Physical Examination: The boy looks strong but tired. His mucous membranes are pink, his tongue is pink and moist, his sclera is clear. His face is slightly red. His lymph glands are not swollen. An occasional rhonchi can be heard in his chest.

The child had two attacks of coughing during the examination. The cough is short and sharp. He coughs up sticky white mucus. Inspiration after coughing is harsh.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most useful to you when you made your diagnosis?

3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 37

Name of Patient:	Holmes, Dotty
Sex:	Female
Date of Birth:	2 May 1977
Date of Visit:	1 April 1981
Vital Signs:	Temperature 39.5°C Pulse 120 Respirations 33 Weight 17.1 kg
Presenting Complaint and Medical History:	<p>The child has had a fever and bad cold for the last three days.</p> <p>Child developed a head cold about three days ago. It has been getting worse. This morning she developed a high fever. Her eyes are red. She is tired and irritable. She will not eat. She has had no chills or fits.</p> <p>The young girl has had no previous serious illness. She is the second of four children. The other children are all well.</p>
Physical Examination:	Child looks ill and irritable. Her conjunctivae are red. Her tongue is dry and coated. Her throat is red. No exudate is on her tonsils. She has small white

spots with red borders on the mucous membranes of both cheeks. A chest exam reveals some rhonchi, but no respiratory distress or signs of pneumonia. Her abdomen is soft and not tender. No organ enlargement is noted. Her skin is clear except for a red rash on her neck. Many macules and papules, but no pustules are visible.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 38

Name of Patient:	Johnson, Gloria
Sex:	Female
Date of Birth:	15 August 1975
Date of Visit:	5 June 1979
Vital Signs:	
	Temperature 38°C
	Pulse 100
	Respirations 21
	Weight 15.7 kg

Presenting
Complaint and
Medical History:

The mother reports that her child has been feverish and fretful for the past five days. Today the left side of her face is swollen and she will not eat solid food. She sleeps fairly well at night. She does not play during the day, and she is listless. She passes urine normally.

She is the third of four children. Her birth was a full term, normal delivery. At birth, she weighed 2.8 kg. She has never been hospitalized.

Physical
Examination:

The child is listless and tearful. Her mucous membranes are pink. Her sclerae are clear. The child cannot open her mouth wide. Her tongue and cheeks are both moist and pink. A swelling at the angle of the jaw on the left side extends the mastoid process and encroaches on the left cheek. The swelling is tender. Her teeth and ears are normal.

Her chest, skin and abdomen are all normal.

Study the information given above, then answer these questions

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

Unit 5

Problems of Infants and Children

STUDENT GUIDE

OBJECTIVES

1. Recognize these symptoms and signs of problems of infants and children:
 - Weakness of arms and legs
 - Fever
 - Stiff neck
 - Swelling and pain in joints
 - Heart murmur
 - Anemia
 - Jaundice
 - Enlarged and tender finger and toe joints
 - Enlarged liver
 - Enlarged spleen
 - Tenderness, redness, swelling, and heat over bone
2. Describe the clinical picture for these problems of infants and children:
 - Poliomyelitis
 - Rheumatic fever
 - Sickle cell anemia
 - Osteomyelitis
3. Interview parents and examine infants and children with these problems.
4. Treat and care for infants and children with these problems.
5. Teach parents and their families about these problems and how to prevent and care for them.

LEARNING ACTIVITIES

1. Listen to and discuss a presentation on the clinical picture of poliomyelitis, rheumatic fever, sickle cell anemia, and osteomyelitis.
2. Work in a small group on case study exercises to diagnose the problem and determine the treatment and care procedures for it.
3. Join a class discussion of your diagnosis and treatment exercise.
4. Join in a role-play in which a health worker advises parents and family on the prevention and care of one of the problems discussed in this unit.

5.1 POLIOMYELITIS

Poliomyelitis, or “polio” for short, is a virus disease which spreads among people through feces and polluted water. For this reason, the disease most often occurs in areas with poor sanitation and crowded living conditions.

Ninety of every one hundred people who become infected with the polio virus have no signs or symptoms of the disease. Others have a mild upper respiratory or gastrointestinal infection. These people do not seek medical attention. The disease most often does not grow worse. However, one child in every hundred children who become infected with polio will suffer paralysis.

Once a child develops a polio infection, no drug can cure the disease. It must run its course. However, once a child has had the disease, he is immune to it for the rest of his life. Vaccinations can also give a child permanent immunity to polio. Early vaccinations against polio protect children from serious complications of the disease.

Because all children are not vaccinated against polio, however, you may see cases in which a patient is suffering serious signs of nervous system infection. This clinical picture describes the severe polio infection.

CLINICAL PICTURE

a. Presenting complaint

The patient comes to you with a *fever*, *stiff neck*, and *sudden weakness* of his *arm* or *leg*.

b. Medical history

The patient may have a history of a minor upper respiratory or gastrointestinal infection. This infection would occur about one week before the onset of *paralysis*. Sometimes, however, there is no history of this first infection. Onset of the *paralysis* often occurs with severe *muscle cramps* and *muscle spasm*.

In children younger than five, the *paralysis* most often affects the *legs*. In infants, children older than five, and adults, the *paralysis* most often affects the *arms* and chest muscles.

c. Physical examination

Test the muscle strength. Paralyzed muscles have little or no reflexes. The patient *cannot move* his affected *arm* or *leg*.

PATIENT CARE

Following an acute attack of polio, the patient will regain some muscle strength. Help him exercise the muscles he does have.

Do not give injections to patients suffering acute stages of polio. Injections can cause increased paralysis.

PREVENTION

You can prevent polio by vaccinating children in the community.

5.2 RHEUMATIC FEVER

Rheumatic fever is the most common cause of heart disease in people younger than fifty years old. The disease occurs as the body's reaction to a certain bacterial infection. This bacteria infection commonly causes tonsillitis. Early treatment of bacterial tonsillitis can prevent rheumatic fever. In rheumatic fever, many parts of the body can be affected. Most often, the heart and the joints are involved. Children are usually five to fifteen years old when they develop rheumatic fever.



JOINTS THAT CAN BE AFFECTED BY RHEUMATIC FEVER

02101

CLINICAL PICTURE

a. Presenting complaint

The child has a *high fever* and feels tired. His elbow, knee, ankle, and wrist *joints* may be *swollen* and *painful*.

b. Medical history

The patient may have had *tonsillitis* two or three weeks before the rheumatic fever began. He may also have had rheumatic fever before.

c. Physical examination

The child usually has a *high fever*. He may show signs of feeling tired and weak. Listen for a *heart murmur*. Check for signs of heart failure. Examine the child's arms and legs. One or more large *joints* may be *swollen*, red, and *tender*. The *inflammation* of rheumatic fever *moves* from one joint to another.

COURSE AND COMPLICATIONS

An attack of rheumatic fever often lasts several months. One in five children will have another attack within a few years. In some cases, rheumatic fever damages the valves of the heart. Valve damage leads to very serious heart disease later in life.

PATIENT CARE

a. Refer the patient to a hospital

Because rheumatic fever can lead to heart disease, send patients to a doctor to confirm the diagnosis.

b. Advise bed rest

Even though a child with rheumatic fever will want to run and play soon after treatment reduces the symptoms of his disease, he should rest instead. Exercise can increase any damage to the heart the rheumatic fever may have caused.

c. Give aspirin

High doses of aspirin will reduce the fever, help fight inflammation, relieve pain in the joints, and reduce swelling. Give 130 mg aspirin per kilogram of body weight in four to six doses a day. See Patient Care Guides.

If the child suffers any toxic effects of aspirin, reduce the dosage. Toxic effects of aspirin are ringing in the ears, nausea, and vomiting.

If the child's temperature is higher than 39°C, show his parents how to reduce the fever with wet towels. See Patient Care Procedures.

d. Give penicillin

Give the patient penicillin V, four times daily for ten days. This kills the bacteria which causes rheumatic fever. You may instead give one shot of benzathine penicillin, IM. See Patient Care Guides.

To prevent another attack of rheumatic fever and the possibility of further heart damage, give the patient one of the following:

Benzathine penicillin, 1.2 million units, IM, monthly

Penicillin V, 250 mg tablet, daily

Sulfadiazine, 1 gm daily

Continue this treatment until the patient is twenty years old. See Patient Care Guides.

5.3 SICKLE CELL ANEMIA

Sickle cell anemia occurs among people of African descent. Children inherit the problem from their parents. Because sickle cell disease is inherited, it cannot be cured. You can only treat its symptoms.

A person with sickle cell anemia has blood cells shaped like sickles, or crescents. These sickle-shaped cells sometimes block small blood vessels. They stop the flow of blood to vital organs.

Sickle-shaped blood cells break down faster than normal blood cells. When the sickle cells break down, the spleen collects them from the circulatory system. The spleen swells from the number of cells it collects.

When the sickle cells break down, they release an abnormal amount of hemoglobin in the blood. This excess of hemoglobin leads to jaundice, a yellowing of the skin.

Lack of red blood cells causes anemia in the person with sickle cell disease.

When sickle cells block blood vessels, cutting off the circulation in that part of the body, the person suffers severe pain. These attacks of pain are called sickle cell crises.

CLINICAL PICTURE

a. Presenting complaint

The child suffering a sickle cell crises will have *severe pain* in his *bones, joints, abdomen, or chest*.

b. Medical history

A person with sickle cell disease may have problems in infancy and childhood. The patient will have a history of *anemia* and sickle cell crises. The *liver* and *spleen* grow *large* during early childhood. *Jaundice* may increase. Scarring shrinks the spleen by the time the child with sickle cell disease is a young adult.

c. Physical examination

Children with sickle cell anemia often grow poorly. They have long, slender limbs and short trunks. *Finger* and *toe joints* are often *enlarged* and *tender*. During a crisis, the abdomen may be rigid, but other problems such as appendicitis can cause this as well. Pain and tenderness in the patient's arms and legs may be confused with rheumatic fever or an infected joint or bone. Examine the patient for *jaundice*.

COURSE AND COMPLICATIONS

Sickle cell anemia patients frequently have pneumonia and osteomyelitis. Many people with sickle cell disease die in infancy and early childhood. Blood cells that block the blood vessels to the brain may cause brain damage.

PATIENT CARE

a. Give extra fluids

Give a patient in a sickle cell crisis extra fluid. If he cannot drink because of abdominal pain, give him fluids intravenously. See Patient Care Guides.

b. Give aspirin

Give the sickle cell patient aspirin for relief of his pain.

c. Look for complications

Look for complications such as pneumonia and bone infection.

d. Refer to hospital

If the sickle cell patient is in sickle cell crisis and in great pain or if you suspect a complication, refer him to a hospital. Continue IV fluids during the transfer, if possible.

PREVENTION

Parents who have had one child with sickle cell anemia can have other children with the same problem. Tell them about this risk.

Sickle cell crises may be reduced by preventing childhood diseases and malaria.

5.4 OSTEOMYELITIS

Osteomyelitis is a bone infection caused by bacteria. The infection spreads to the bone in two ways. In children, the infection spreads through the blood stream. The child often has been ill with respiratory, intestinal, kidney, or skin infection. Infection and trauma also increase the risk of osteomyelitis.

The second way in which infection spreads into bone is by direct contact with bacteria. Compound fractures, when a bone breaks the skin, and surgery around the bone may lead to osteomyelitis.

CLINICAL PICTURE

a. Presenting complaint

In children, osteomyelitis occurs suddenly with **high fever**, chills, and extreme sickness. The child may feel a **throbbing pain** in the infected **bone**.

b. Medical history

Ask the patient about any illness he has had during the last two months, especially any illness treated with antibiotics. Antibiotics will mask the signs and symptoms of osteomyelitis. Also, ask about any **injuries**.

c. Physical examination

Check the child for **high fever**, chills, severe illness. In early stages of osteomyelitis, look for **tenderness over** the infected **bone**. The child may **refuse** to **use** the **extremity**. He may guard the muscle,

limiting movement. In later stages, look for *redness*, *swelling*, and *heat* over the area.

COURSE AND COMPLICATIONS

Lack of treatment often leads to sepsis and death. Osteomyelitis which is treated too little or too late leads to chronic osteomyelitis with destruction of bone.

PATIENT CARE

a. Refer to hospital

If you suspect a patient has osteomyelitis, refer him to a hospital immediately.

b. Splint the limb

Splinting the affected limb will give the patient some comfort during his travel to the hospital.

REVIEW QUESTIONS

Problems of Infants and Children

1. TRUE (T) OR FALSE (F)

_____ Nearly 90% of all children infected with polio will develop paralysis.

2. Polio most often affects the legs of children younger than five. What parts of the body are most often affected when polio strikes children older than five and adults?

3. How does the polio virus spread?

4. How can polio be prevented?

5. A ten-year-old child enters the clinic with pain in her right wrist and left elbow. You find the joints slightly swollen and red. She also has a fever of 39°C. What advice would you give her parents?

6. Aspirin given in high dosage will lower the fever and fight the inflammation of rheumatic fever. It will also relieve joint pain and reduce swelling. How much aspirin would you give a child who weighs 9 kg? What would you tell the parents about possible side effects?

7. How does a young child get sickle cell anemia?

8. TRUE (T) OR FALSE (F)

_____ There is no cure for sickle cell disease and the individual experiences life-long anemia.

9. Why is an enlarged spleen a sign associated with sickle cell anemia in young children?
10. Although no cure exists for sickle cell disease, the number and severity of sickle cell crises can be reduced. What measures can you take to reduce the frequency or severity of crises?
 - a.
 - b.
11. Describe two ways the infection of osteomyelitis spreads to the bone.
 - a.
 - b.
12. Explain the differences between the signs of osteomyelitis and other problems of infants and children such as polio, rheumatic fever, and sickle cell anemia.
13. How would you treat and care for an infant or child who you diagnose as having osteomyelitis?
14. What two diseases associated with pain in a child's arms and legs can recur?

REVIEW EXERCISE

Problems of Infants and Children

1. Use your Student Text to fill in the clinical picture information for each problem of infants and children listed.

PROBLEM	CLINICAL PICTURE		
	PRESENTING COMPLAINT	MEDICAL HISTORY	PHYSICAL EXAMINATION
POLIOMYELITIS			
RHEUMATIC FEVER			
SICKLE CELL ANEMIA			
OSTEOMYELITIS			

2. A mother brings her seven-year-old child to your clinic. The mother explains that her son is very sick. He seems to be losing the use of his right leg. The child complains of severe pain in his upper leg. You find redness and heat over this area. What kind of an infection do you suspect? What steps would you take to confirm a diagnosis? Describe what care you would provide for the child.

a.

b.

c.

d.

e.

REVIEW EXERCISE

Case Study 39

Name of Patient: Tree, Robert

Sex: Male

Date of Birth: 30 August 1971

Date of Visit: 10 June 1981

Vital Signs: Temperature 37.6°C
 Pulse 94
 Respiration 18
 Weight 30 kg

Presenting Complaint and Medical History: The mother says her son has no energy. She says he does not play. He loses his breath easily. At home, he spends a lot of time sleeping. He is doing poorly at school. The problem started six months ago, and it seems to be getting worse. The mother thinks her son needs vitamins.

When he was six years old, the boy had severe pain in his stomach. He was admitted to the hospital for appendicitis. He has complained of pain and swelling in his fingers.

Family history: Mother and father are well. Three children are alive and well.

Physical Examination: The child looks thin and alert. His mucous membranes are pale. His sclerae look slightly yellow. Tonsils are not enlarged. His lymph glands are not enlarged. His tongue is pale. His breath sounds are normal. His heartbeat is regular. No sign of abdominal tenderness or guarding seen. His bowel sounds are normal. Liver edge felt 1 cm below the rib margin. The spleen was not felt. No rashes seen on his skin.

Study the information given above, then answer these questions.

1. What is the diagnosis?

2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

REVIEW EXERCISE

Case Study 40

Name of Patient: Watts, Andrea

Sex: Female

Date of Birth: 14 April 1974

Date of Visit: 23 July 1980

Vital Signs: Temperature 39.2°C

Pulse 115

Respirations 24

Weight 16 kg

Presenting Complaint and Medical History: Child began to complain of pain in her right knee on the day before her visit. She cannot walk because of the pain. She has had a high fever for the past five days. The fever is increasing.

The patient had a sore throat about three weeks before and was examined at the health center. The doctor treated her with some tablets of penicillin. The sore throat went away. A week ago, however, she started feeling tired and lost her appetite for food.

Physical
Examination:

The child looks pale and sick. Her throat and tonsils look normal, but the lymph glands in her neck are swollen. The lymph glands are not tender. She has no difficulty breathing. Her chest sounds are clear. Her pulse is very rapid. Her abdomen is soft. No organs can be felt. Her skin is clear. She has no rashes. Examination of her left knee shows marked swelling. The right knee feels warm, compared to the left knee. No other joints are enlarged or tender.

Study the information given above, then answer these questions.

1. What is the diagnosis?
2. What information in the case study was most helpful to you when you made your diagnosis?
3. Was any information missing from the case study that would have helped you make the diagnosis?
4. How would you treat this patient?
5. What advice would you give this patient?

Unit 6

Family and Community Education: Prevention and Care of Diseases of Infants and Children; Skill Development

STUDENT GUIDE

OBJECTIVES

1. Identify important information on the prevention and care of diseases of infants and children that may be shared with families and the community.
2. Develop simple messages on prevention and care from this information.
3. Develop these messages into a family or community presentation.
4. Give the presentation to people in the community.

LEARNING ACTIVITIES

1. Review the problems and conditions of infants and children discussed in this module.
2. Discuss how members of a community can help prevent and care for diseases of infants and children.
3. Discuss the strengths and weaknesses of the nutrition demonstration presented in the text. Discuss other methods of making community health presentations.
4. Work with other students in a small group to plan a community health demonstration.
5. Present and discuss this demonstration with the rest of the class.
6. Practice giving demonstrations on the prevention and care of diseases of infants and children. Give these to parents, families, and other community groups during your three-day and two-week clinical practice sessions.

6.1 CHOOSING EDUCATIONAL METHODS

The first step in choosing an educational method is to decide on a topic. Your choice of topic will depend on the problems of infants and children in the community. Your choice of topic will also depend on ways people in the community may care for and prevent these problems.

Once you have a topic, select the specific information you want to communicate. Then decide who you want to communicate this information to. For example, if you choose nutrition as a topic, you will find many interested groups in the community: pregnant women, mothers of babies or infants, and parents with young children.

For each group of people, you may use a different educational method. The subject you want to share may determine what method you use. For example, if you want to share ideas with mothers on what foods they should feed their infants, you need to show them how to prepare the food. You may choose a demonstration as the best educational method.

If you want to share ideas on the nutritional value of foods that people traditionally eat, you may discuss your ideas with the people. You may also want to involve a community health worker and elders in the community who have influence.

When deciding what you would like to communicate, remember that you should practice what you suggest other people practice. If you have a child, feed him what you tell others to feed their children. If you and your family are healthy, people will believe what you say.

Also, people learn by doing. Involve people in your educational method. Give them a chance to talk, ask questions, and practice what you are teaching them.

6.2 DEVELOPING MESSAGES

Say, for example, you have chosen nutrition as your topic. You decide to include information on the kind of foods that infants and children

should eat. What specific messages on these subjects would you include?

Read the following sample lists of messages. Add any messages that you would include in your presentation, and cross out any messages you would not include.

FOODS THAT INFANTS FROM BIRTH TO ONE YEAR SHOULD EAT

Breast-feed infants. Breast milk is clean and the most nutritious food for infants.

Breast milk protects infants from many illnesses.

Mothers should begin breast-feeding a baby as soon after birth as possible.



The infant may begin eating additional foods such as porridge after three months.

Mashed fruit may be given to an infant at any time.

Infants need to eat well when they are ill because they must be able to fight infection.

Mothers should be able to recognize the early signs of undernutrition.

Breast milk is the most important source of protein for children younger than two years old.

After about one year, a child may be introduced to foods in the adult diet.

A child's diet should include sources of protein such as fish, meat, eggs, and liver.

A growing child needs body building foods such as cows' milk, fish, meat, beans, and ground nuts; protective foods such as fresh fruits, fruit juices, or green leafy vegetables chopped up very fine; and energy foods like the maize, rice, and sorghum cereals.



- SOME GOOD FOODS FOR YOUNG CHILDREN

6.3 SAMPLE DEMONSTRATION

This sample demonstration shows you what one mid-level health worker, MLHW Tom, did before, during, and after his demonstration on nutrition.

Before his demonstration, MLHW Tom made a list of all the messages he wanted to share with mothers of infants. With the help of the community health worker, he made a list of all the mothers in the community. He asked the community health worker to invite the mothers. He chose the house of one of the mothers, Mrs. Jamalia, for the demon-

stration. Why did he choose a mother's home? He wanted to show that good food for infants can be made with what is available in the home. He did not have to take any materials with him on the bus to the community. He did not use anything that mothers would not have at home.

On the day of the demonstration, he arrived at Mrs. Jamalia's home before the mothers arrived. He arranged the kitchen so everyone would be able to see what he was doing. He also saw what food was in the kitchen.

After the mothers and the community health worker arrived, MLHW Tom began his demonstration.

MLHW TOM: I am pleased that all of you have been able to come to Mrs. Jamalia's house. I want to thank her for letting us use her kitchen. I see Mrs. Nasseem has brought her son, Bobby. How is Bobby, Mrs. Nasseem?

MRS. NASSEEM: Bobby is very well. I have been giving him the foods you told me about. Our community health worker, Nora, has been very good and patient with me. She has shown me how to make soft food for my boy.

The MLHW talks to other mothers so they feel comfortable. He also talks and plays with a few children.

MLHW TOM: Today we have come to Mrs. Jamalia's house so I can show how you can make food that is good for infants. First, though, I want to say that breast milk is the best food for infants. Most infants here today are more than four months old. They need more than breast milk now to grow healthy and strong. I am going to show you how to prepare soft food for infants.

Mrs. Jamalia, this is your kitchen. I think you should make the soft food.

MRS. JAMALIA: I have not made this before, but I will try.

MLHW TOM: What grains do you have in the kitchen, Mrs. Jamalia?

MRS. JAMALIA: I have some wheat and maize.

MLHW TOM: Do you have any legumes or beans?

MRS. JAMALIA: I have some green beans. I will bring some.

ZEENA: My mother says that little children should not be given maize. She says maize gives them too much gas.

MRS. NORA: Many people in our village believe this. I have been feeding my boy, Saleem, maize since he was four months old. Tom has been feeding both his children the same. We have not had this problem. Mrs. Nasseem has been feeding her boy maize and wheat and look how healthy he is looking.

MLHW TOM: Mixing wheat and maize is good. You can also mix some other grain if you like. You can use rice or millet instead of maize. Two grains are better than one.

Mrs. Jamalia is back, so we are going to start making the soft food. First, Mrs. Jamalia will roast the wheat on this fire. Would somebody like to help? We have two fires, so we can start roasting the maize at the same time.

Mrs. Nasseem gets up to help. She cleans the maize and puts it on the platter to roast.

MINNIE: Why do you have to roast these?

MLHW TOM: Infants can digest roasted beans, peas, or grains better. Roasting also makes them easier to grind.

Mrs. Jamalia and Mrs. Nasseem take the wheat and maize off the fire when they are roasted. Mrs. Jamalia now puts the beans on the fire to roast.

MLHW TOM: Now Mrs. Nasseem is going to grind each of the grains separately. After she grinds them to a fine flour, she will mix them.

After the beans are roasted, Mrs. Nasseem begins to grind them. Mrs. Jamalia puts the mixed flours together in a jar. She puts two cups of bean flour with one cup of wheat flour and one cup of maize.

MLHW TOM: Watch carefully what Mrs. Jamalia is doing. She is mixing one cup of wheat flour, one cup of maize flour and two cups of bean flour. It is easy to remember one plus one equals two. One for each grain and two for the beans.

How do we cook this? Mrs. Jamalia do you have any vegetables?

MRS. JAMALIA: I have some spinach growing in the garden. I'll send Monsef, my boy, to get some.

MLHW TOM: We now have the flour mixture and Monsef is going to get the spinach. Mrs. Nasseem is going to show us how to make the porridge. She has been doing this for many days now and look at her boy. Does he look healthy to you?

MRS. NASSEEM: The first thing you must do before starting to cook the porridge is to wash your hands very well.

(Mrs. Nasseem washes her hands with soap and wipes them on a clean towel.)

The next thing is to wash the pot and spoon.

Now I am going to boil some water in this clean pot. Monsef, would you like to wash the spinach you have brought?

MONSEF: Aunt Nasseem what are you cooking?

MRS. NASSEEM: We are cooking some food for your younger brother. Maybe you would like to taste it when it is cooked. Now we have this spinach. Some young children are not used to eating soft foods, so we will cook the spinach in another pot. Then we will mix it with the porridge to see if some children like it. The water is boiling. I am going to add the mixture of flours. I am going to add one cup of this mixture to the water. Let it boil. Soon it will be ready.

Mrs. Nasseem shows how to cook the flours to make the porridge. The porridge is not too thin nor too thick. She lets the porridge cool and cleans a few cups and spoons. She cooks the spinach and shows the mothers how to mash it and mix it with the porridge in one of the cups. In one cup she adds a little butter, in another she adds a little brown sugar.

MRS. NASSEEM: The porridge is ready. Who wants to taste it?

Mrs. Nasseem shows the mothers how to start feeding a young child some soft food. She explains that on the first day you give the child a little bit. The child might spit out the food. This does not mean he does not like it. The food is different for him.

MRS. NASSEEM: Keep trying. Do not give up. In a few days, the child will like eating the food. Give him a little at first. Day by day, give him a little more. I am going to feed

Samson some of this. He likes it with spinach. Samson has been eating this food for many days now.

NORA: Now Mrs. Nasseem has shown you how to make food and how to feed it to your young children. She has done such a good job that I cannot add anything.

MLHW Tom: Thank you very much Mrs. Nasseem. That was very well done. Now I am going to ask some of you to come here and show us what Mrs. Nasseem has done.

Tom then asks two mothers to repeat how to prepare the food. Other mothers help them as they go along. MLHW Tom answers the questions some of them ask. He ends his demonstration by thanking the mothers for coming.

This sample nutrition demonstration includes some important health messages. Eating enough and the right kinds of food is an important way of caring for and preventing diseases of infants and children. However, it is not the only way. As you have seen from your study of diseases of infants and children, many of these problems and conditions result from poor sanitation and hygiene; lack of proper immunization; and lack of knowledge about home care. You should know these causes so you can share with community members ways to prevent diseases from occurring. You might list some of the messages that you would want to share with a community. This way, you'll be prepared to help people learn how to take better care of themselves.

REVIEW QUESTIONS

**Family and Community Education:
Prevention and Care of Diseases
of Infants and Children**

1. Why is it important to practice what you recommend to other people?
2. What should you consider before selecting an educational method for a community health presentation?
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.
3. How did the health worker prepare for his demonstration in the text sample?
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.

4. How did the health worker involve the mothers in the demonstration?
 - a.
 - b.
 - c.
5. How did the health worker evaluate whether the mothers learned how to make soft foods?
6. What were the strengths of the health worker's demonstration? What were its weaknesses? How might it have been better?
 - a.
 - b.
 - c.
 - d.
 - e.

REVIEW EXERCISE
Family and Community Education:
Prevention and Care of Diseases
of Infants and Children

1. List four messages on sanitation and cleanliness that you might communicate to a community.
 - a.
 - b.
 - c.
 - d.
2. What messages should you give parents about immunizations for their children? See Postnatal Care module.
3. List three simple home care procedures related to the care of infants and children that can be developed into health messages.
 - a.
 - b.
 - c.

SKILL CHECKLIST

Using a Demonstration to Share Health Messages

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.

2) Supervisors should use it when they evaluate how well students use a demonstration to share health messages.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate

2 = Needs improvement

3 = Satisfactory

4 = Above average

5 = Excellent

When using a demonstration to share health messages, you should:

	YES	NO	RATING	COMMENTS
1. Outline the health messages you want to communicate in your demonstration				
2. Choose a location that is easy to reach and large enough so that the audience can see clearly				
3. Invite people to the demonstration in advance so they know the purpose of the demonstration and when and where it will be held				
4. Make step-by-step notes on how you will give the demonstration and the important points you will tell your audience at each step				

	YES	NO	RATING	COMMENTS
5. Prepare all the materials you will need for the demonstration. Use as many locally available materials as possible in your demonstration				
6. At the time of the demonstration, explain to the audience what you are going to do and why				
7. Ask people in the audience to help you with the demonstration				
8. Explain the demonstration step-by-step				
9. Stop to answer questions and ask questions				
10. Give people in the audience a chance to practice				
11. At the end of the demonstration, ask people in the audience to tell you what they learned from the demonstration				
12. Summarize the important health messages in the demonstration				

Unit 7
**Providing Care for Infants and
Children with Diseases;
Clinical Rotation**

STUDENT GUIDE

ENTRY LEVEL

Before starting your clinical experience, you must:

1. Score at least 80% on a test of your knowledge of diseases of infants and children.
2. Earn at least two Satisfactory ratings on how you:

Obtain a medical history for a disease of infants and children

Do a physical examination for a problem of infants or children

Identify the physical signs associated with the problems of infants and children

Educate parents about diseases of infants and children

Present health messages about diseases of infants and children

OBJECTIVES

1. Diagnose all of the diseases of infants and children described in this module.
2. Properly record information about medical history, physical examination, and patient care.
3. Provide correct patient care using the treatments and management procedures in this module.
4. Advise parents about the home care and prevention of diseases of infants and children.

LEARNING ACTIVITIES

Provide patient care, under supervision, for one month in a pediatric clinic.

During your time in the pediatric clinic, your supervisor will help you identify and treat infants and children with disease problems. You will be expected to use Diagnostic and Patient Care Guides. You will have the chance to practice the patient care skills that were introduced in class.

EVALUATION Level II

When you feel that you have had enough experience, ask your supervisor to evaluate you. He will do this using the log book. This log book contains a list of the problems you will work with in the pediatric clinic. It also shows how many infants and children with problems you should see. As your supervisor watches you deal with a problem, he will write his rating in the log book. He will rate you in the following way for diagnosis and patient care:

- 1 = Diagnosis incorrect
- 2 = Diagnosis correct, treatment incorrect
- 3 = Diagnosis and treatment correct, but
no patient advice given
- 4 = Diagnosis, treatment, and patient advice correct

You will be expected to get a 4 rating.

During the clinical experience described in this unit, you will be expected to receive at least a Satisfactory rating on your skill in:

- Preparation and use of super porridge
- Preparation and use of oral rehydration fluid
- Intravenous rehydration using scalp vein technique
- Intravenous rehydration using peripheral vein technique
- Educating the mother about expressing breast milk
- Feeding a baby by nasogastric tube

Unit 8

Helping the Community Prevent and Care for Diseases of Infants and Children; Community Phase

STUDENT GUIDE

ENTRY LEVEL

Before you start your community experience, you must:

1. Score at least 80% on a test of your knowledge of diseases of infants and children.
2. Complete four to six weeks of clinical experience in caring for infants and children.
3. Score a 4 on diagnosis, treatment and patient advising skills.
4. Earn at least two Satisfactory ratings on:

Performing each of the patient care procedures described in this module

Teaching community health workers

Presenting community health messages

OBJECTIVES

1. Provide clinical services to infants and children.
2. Identify diseases of infants and children and plan a program to prevent them from occurring and spreading.
3. Advise the community about its role in preventing diseases of infants and children.
4. Identify other members of the health team who can assist in prevention of diseases of infants and children.

LEARNING ACTIVITIES

Your community experience will last three months. During that time, in addition to providing clinical services, you should:

1. Survey the community to identify the most common diseases of infants and children.
2. Identify any local customs that increase or decrease the occurrence of diseases of infants and children.
3. Meet with community members and obtain their help in preventive activities.

EVALUATION Level III

During your community experience, your supervisor will evaluate you. To do this, he will use the standards set out in the log book.

CHILD SPACING

The MEDEX Primary Health Care Series

CHILD SPACING

Student Text

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FUNDED BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT CONTRACT NO. DSPE-C-0006. The views and interpretations expressed are those of the Health Manpower Development Staff and are not necessarily those of the United States Agency for International Development.

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TASK ANALYSIS TABLE

Work Requirements DUTIES	Training Requirements	
The MLHW will: 1. Take and record the medical history of women intending to use oral contraceptives or an IUD.	SKILLS	KNOWLEDGE
	The MLHW trainee will show that he is able to: 1.1 Record a person's request for a contraceptive method 1.2 Question a woman about her past medical conditions and experiences with contraceptive methods	The MLHW trainee will show that he knows: 1.2.1 Questions to ask a woman about her medical history and experiences with contraceptive methods 1.2.2 Basic information needed to complete the medical history of a woman interested in child spacing. Whether she has had any previous experience with child spacing Which method she used Whether any associated problems occurred

<div>Work Requirements</div> <div>DUTIES</div>	<div>Training Requirements</div> <div>SKILLS</div>	<div>KNOWLEDGE</div> <div> <p>Whether a woman who intends to use an oral contraceptive has a medical history of:</p> <ul style="list-style-type: none"> Blood clotting or inflammation of veins in the leg Heart disease Liver disease High blood pressure Cancer of the breast, or breast lumps Cancer of the cervix Cancer of the uterus Cervical erosion or mass Vaginal discharge Irregular vaginal bleeding Serious headaches <p>Whether a woman who intends to use an IUD has a history of:</p> <ul style="list-style-type: none"> Painful menstruation or heavy bleeding with menstruation Venereal disease <p>1.3.1 How to use medical history forms</p> </div>
	<div>1.3 Record a woman's medical history</div>	

<p>Work Requirements</p> <p>DUTIES</p>	<p>Training Requirements</p>	
<p>2. Give women intending to use oral contraceptives or an IUD a physical examination, including a pelvic examination</p> <p>3. Provide counseling about human reproduction, child spacing methods, abortion, and sterility</p>	<p>2.1 Recognize any abnormal physical conditions that would affect a woman's use of oral contraceptives or an IUD</p> <p>2.2 Give a physical examination, including a pelvic examination, and record the findings</p> <p>3.1 Counsel individuals and couples about child spacing methods that may be appropriate for them, abortion, and sterility</p>	<p>KNOWLEDGE</p> <p>2.1.1 The anatomy and physiology of the male and female reproductive systems</p> <p>2.1.2 Signs and symptoms associated with problems of the reproductive system</p> <p>2.2.1 Steps to do a pelvic examination</p> <p>2.2.2 How to use forms for writing down the findings of a physical examination</p> <p>3.1.1 Basic communication techniques for use in counseling</p> <p>3.1.2 The advantages, disadvantages, side effects, and possible complications of the following child spacing methods: Abstinence Male withdrawal Lactation Mucus ovulation</p>

Work Requirements DUTIES	Training Requirements	
	SKILLS	KNOWLEDGE
4. Provide child spacing services	4.1 Distribute contraceptives and provide instructions about their use	Rhythm Temperature change Condoms Spermicidal foams, creams, and jellies Diaphragm IUD Oral contraceptives Vasectomy Tubectomy Mini-laparotomy Laparoscopy
		3.1.3 How abortions are done 3.1.4 Causes of sterility 3.1.5 Cultural beliefs of couples 3.1.6 Religious beliefs of couples 3.1.7 Family conditions 4.1.1 How various contraceptive methods are used 4.1.2 How to administer oral contraceptives

Work Requirements DUTIES	Training Requirements	
	SKILLS	KNOWLEDGE
		<p>4.1.3 Contraindications to specific contraceptive methods</p> <p>4.1.4 How to use the following reference manuals and modules: Child Spacing module Problems of Women module Formulary Patient Care Procedures Patient Care Guides</p>
	<p>4.2 Find the correct size diaphragm for a woman</p>	<p>4.2.1 How to find the correct size diaphragm for a woman</p>
	<p>4.3 Insert a diaphragm in a woman and teach her how to use and care for it</p>	<p>4.3.1 How to insert a diaphragm</p> <p>4.3.2 How to teach a woman to use and care for a diaphragm</p>
	<p>4.4 Insert and remove an IUD</p>	<p>4.4.1 How to insert and remove an IUD</p>

SCHEDULE

CHILD SPACING

DAY 1	DAY 2	DAY 3	DAY 4
Introduction to Child Spacing module	Natural child spacing methods	Intrauterine devices (IUDs)	Oral contraceptives
Human reproduction	Abstinence Male withdrawal Lactation Mucus ovulation Rhythm Temperature change		Permanent methods of contraception, abortion, and sterility
Counseling for child spacing	Chemical and barrier methods of child spacing Spermicides Condoms Diaphragms		

DAY 5	DAY 6		
Clinical child spacing review	Clinical child spacing; Clinical practice		
Clinical child spacing; Clinical practice	Posttest		

Skill development: one week
Clinical rotation: one month

Introduction

In this module you will learn about child spacing as it is handled in the clinical situation. The text and learning activities will help you develop the clinical skills necessary to aid individuals and couples in planning their families. You will learn about various methods of preventing conception or pregnancy. These methods will be referred to as child spacing or contraceptive methods. You will learn how to counsel people and assist them in selecting the child spacing method that is most appropriate for them. You will have both classroom and clinical experiences.

You will spend much of your time learning the clinical skills necessary for you to provide child spacing services. These skills will include:

- Taking medical histories and performing physical examinations including pelvic examinations

- Inserting and removing IUDs

- Fitting women for diaphragms

- Teaching women how to use and care for a diaphragm

- Referring people to doctors for surgical procedures such as vasectomies and tubectomies

- Counseling people who are concerned about abortion or sterility

Before you start this module, be sure you know:

- The normal anatomy and physiology of reproduction

- How to take a medical history

- How to perform a physical examination, including a pelvic examination

- How to present health messages

If you are not sure how well you know this information or can do these procedures, review the clinical knowledge and skills modules before you go on.

Your schedule shows you when the learning activities will occur. Student Guides in front of each unit tell you more about what you will be expected to do. The units will be taught in order, from Unit 1 to Unit 7. Your teacher will make special arrangements for Units 8, 9, and 10, which will take place in a clinic and a community.

This training program can succeed only if you take an active part. Prepare for each session. Before each session:

Read the Student Text, answer the review questions, and complete the review exercises

Read the Patient Care Guides and study the drugs you will be using

Read the Patient Care Procedures and learn the steps in the procedures

Write down questions to ask your teacher about any part of the lesson you do not understand

The teacher will answer the review questions and any other questions you have in class. This training program will help you build your knowledge and skills. Regular evaluations will allow your teacher to watch your progress. If your progress does not meet the standard, you will be given more time to learn the subject. Your teacher will use the clinical and community performance records to measure your progress. Look at these performance records to prepare for your evaluations.

EVALUATION Level I

After five and a half days of classroom and clinical experiences related to child spacing, you must be able to pass a written test of knowledge about human reproduction, child spacing methods, abortion, sterility, and communication skills with a score of 80% or higher.

After another week of experiences in the maternal and child health clinic, you must receive two Satisfactory ratings on your ability to:

Take medical histories and perform physical examinations, including pelvic examinations, of those women intending to use oral contraceptives or an IUD

Identify abnormal physical conditions that would prevent a woman from using oral contraceptives or an IUD

EVALUATION Level II

During one month of experience in a maternal and child health clinic, you must identify and care for at least two persons for each of the child spacing skills taught in this module. You are expected to earn satisfactory ratings on your performance. The child spacing skills listed on your Clinical Performance Record are:

Counseling individuals and couples about human reproduction and child spacing, and providing them with a child spacing method that is available and appropriate for them

Counseling individuals and couples who are concerned about abortion or sterility

Inserting and removing an IUD

Fitting a woman for a diaphragm and teaching her how to use and care for it

EVALUATION Level III

During the three-month community phase of your training, a supervisor will observe your performance and rate your skill in:

Providing clinical child spacing services to community members who want them

Providing health education and counseling about human reproduction, child spacing, and child spacing methods

Unit 1

Human Reproduction

STUDENT GUIDE

OBJECTIVES

1. Describe the reproductive process and the roles of the major male and female reproductive organs.
2. Explain why understanding human reproduction is an important part of clinical child spacing.
3. Demonstrate how to talk with individuals and couples about human reproduction and the male and female reproductive systems.

LEARNING ACTIVITIES

1. View and discuss slides or diagrams of the male and female reproductive systems.
2. Write at least one question about the reproductive process to share with the class during discussion.
3. Join in a discussion about human reproduction.
4. In your work group, prepare a brief demonstration of how you might talk with individuals and couples about reproduction and the male and female reproductive systems.

A mother should allow at least two years or three years between children. This time allows the mother's body to recover from her last pregnancy and to prepare for a new fetus. This time also allows the earlier child to grow and develop before the mother is pregnant again. Couples can prevent pregnancy by using child spacing methods.

You need to understand the reproductive systems of males and females and the reproductive process. Understanding reproduction will help you see how child spacing methods work and will provide you with information to share with people who come to see you. Your knowledge of how reproduction works will be important to them and to you. People may come to see you because:

They want to avoid pregnancy for a time

They want to stop having children altogether

They are having problems producing children

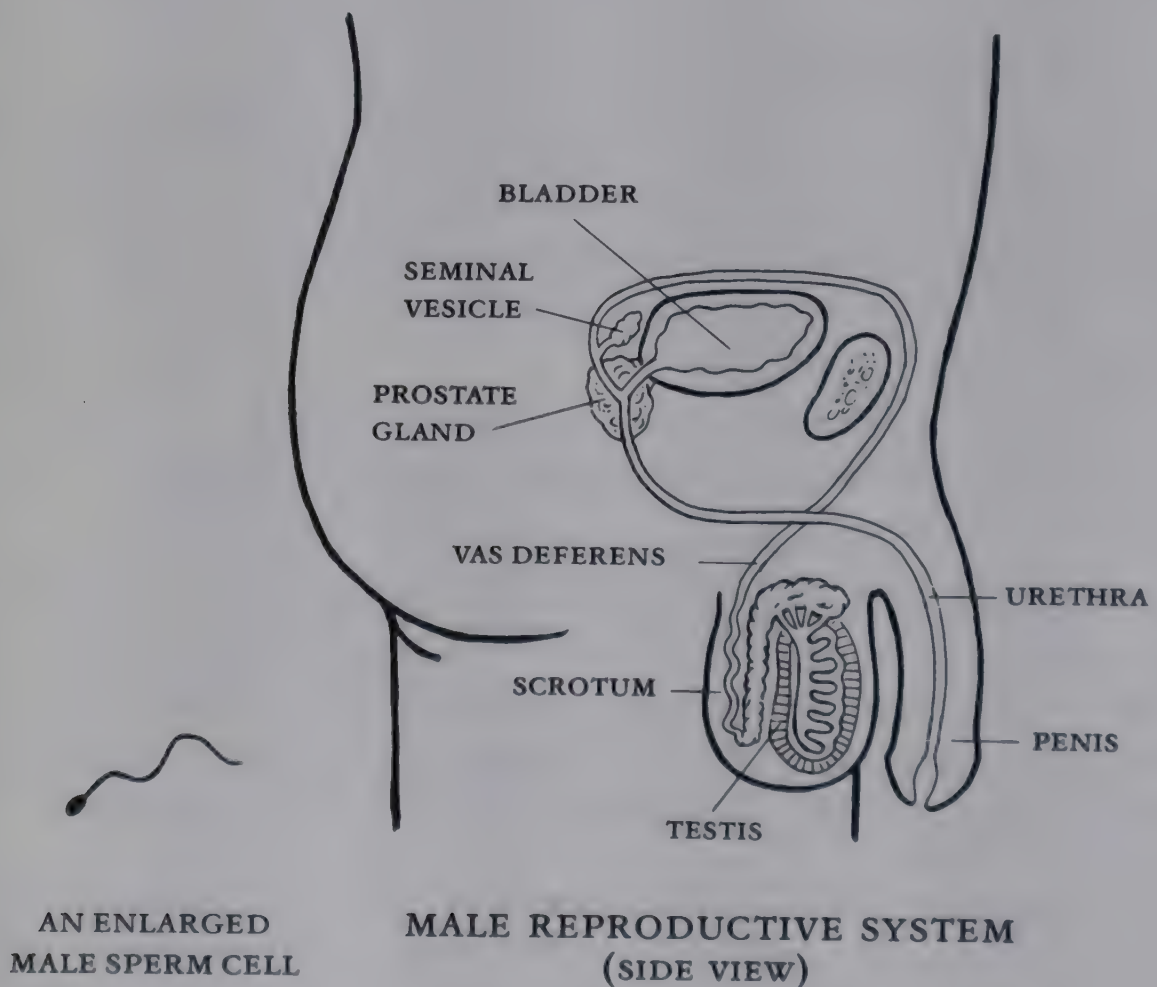
Contraception means "against conception." Conception occurs when a sperm cell joins an egg cell, or ovum. A contraceptive method is anything that prevents the sperm cell and the ovum from joining or that stops a fertilized egg from being implanted in the uterine wall. All methods of contraception interrupt the reproductive process to prevent conception.

Sterility refers to a man or woman's inability to help produce a child. People who have been unable to have children are not necessarily sterile. Some may simply not understand how reproduction works. You will be responsible for helping them learn about the reproductive process and finding whether they indeed are sterile.

Abortion is a way of stopping the continued growth of an egg cell and sperm cell after they have joined. It is not, therefore, a method of contraception. However, abortion can be a method of child spacing.

1.1 THE MALE REPRODUCTIVE SYSTEM

The scrotum is the external sac below the penis that contains and protects the testes. The testes are two oval structures that produce sperm.



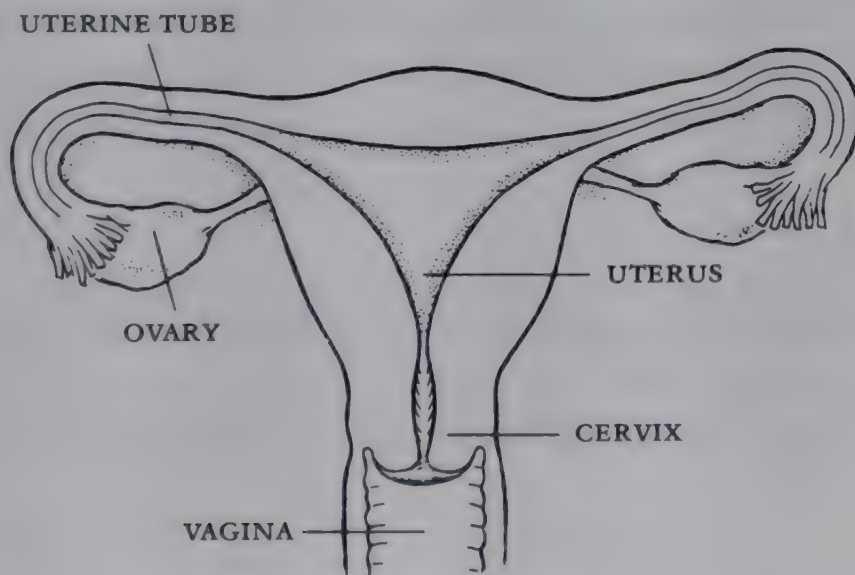
An adult male produces millions of sperm cells in small tubes in the testes. The sperm are stored in these tubes. They remain almost totally inactive while stored.

When a male becomes sexually excited, arteries in his reproductive organs grow larger. More blood enters the tissue of the penis. The penis enlarges and hardens. A man inserts his penis into a woman's vagina

during intercourse. Sperm pass through a long tube called the vas deferens, and through the seminal vesicles and the prostate gland. Mucus from the seminal vesicles and milky fluid from the prostate gland mix with the sperm. This combination of mucus, milky fluid, and sperm is semen. When the man ejaculates, the semen is suddenly released from the penis into the vagina. The male urethra will not allow urine to pass out at the same time that semen is released from the body.

1.2 THE FEMALE REPRODUCTIVE SYSTEM

An ovum, or egg cell, is too small to be seen without a microscope. The ovum is produced in and released from an organ called an ovary. A female has two ovaries that alternate in releasing an ovum every twenty-five to thirty-one days. When the ovary releases the ovum, the long finger-like projections at the ends of the fallopian tubes pull the ovum into the fallopian tube. The ovum then moves down the fallopian tube to the uterus.



FEMALE REPRODUCTIVE SYSTEM
(FRONT VIEW OF INTERNAL STRUCTURES)

Sperm, which have been released into the vagina during the sex act, swim up the uterus and into the fallopian tubes. If an ovum and a sperm cell are in the fallopian tube at the same time, they may join. The ovum is then fertilized. This is conception. The fertilized ovum then travels

down the fallopian tube to the uterus, where it attaches itself to the uterine wall. The uterus supports the fertilized ovum as it develops into a fetus.

A woman can get pregnant during five or six days of each menstrual cycle. Sperm can live inside a female for three days. Therefore, an ovum may be fertilized by sperm that entered the fallopian tubes three days before ovulation. In addition, the ovum can live for two days after ovulation. If it is not fertilized by then, the ovum dies.

Menstruation

The uterus builds up its lining each month to receive a fertilized ovum. If no ovum is fertilized, the lining of the uterus is shed. Bleeding from the vagina lasts for three to five days. This bleeding is called menstruation.

Menstruation usually starts fourteen days after ovulation, the time an ovum is released from an ovary. This monthly cycle of events is called the menstrual cycle. The menstrual cycle varies in length. The average cycle is twenty-eight days, but the cycle can vary from twenty-five to thirty-one days.

A woman usually reaches puberty when she is twelve to fifteen years old and menopause when she is forty to fifty years old. Between puberty and menopause, a woman menstruates and can become pregnant.

Pregnancy

Once an ovum is fertilized, it travels to the uterus and attaches itself to the inside wall of the uterus. It takes about nine months for the fertilized ovum to grow into a fully developed fetus within the uterus. At the end of these nine months, a baby is born.

REVIEW QUESTIONS

Human Reproduction

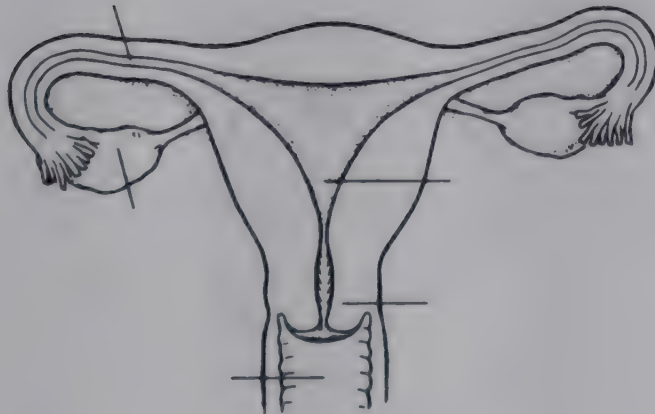
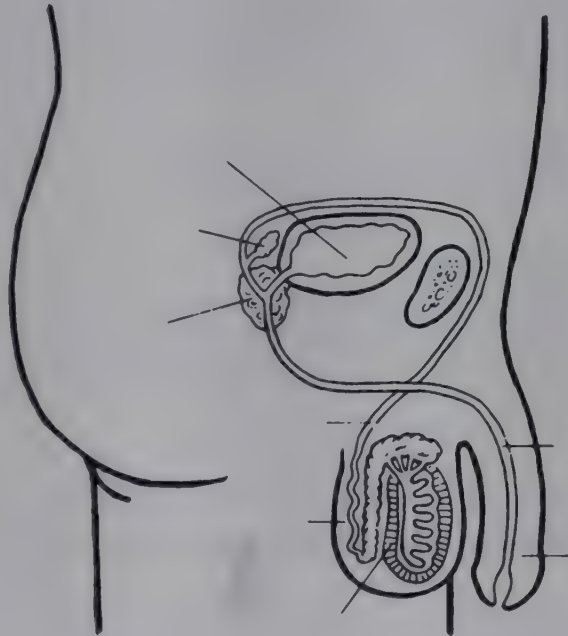
1. Why should a mother allow two years or three years between children?
2. Explain the difference between abortion and contraception.
3. Where are sperm cells produced?
4. Where are ova, or egg cells, produced?
5. Explain the process of fertilization.
6. Describe the function of the following reproductive organs.
 - a. Uterus
 - b. Fallopian tube
 - c. Ovary
 - d. Vagina

7. A woman comes to you and says that she has not been able to have a second child. In talking with her, you find out that she and her husband have intercourse about once a week when the husband comes home from working in the capital city. From what you know about the reproductive process, what might be the reason for this woman's problem?
8. Why would you recommend that a couple who does not want to have children avoid intercourse around the fourteenth day after menstruation?
9. If the vas deferens in a male is cut and tied on both sides, this will be a permanent contraceptive method. From what you know about the male reproductive system, why is this so?

REVIEW EXERCISE

Human Reproduction

1. Without looking at your text, label the major parts of the male and female reproductive systems in the two diagrams below. After you have finished, check your answers with the text.



Unit 2

Counseling for Child Spacing

STUDENT GUIDE

OBJECTIVES

1. Explain the importance of counseling skills in the mid-level health worker's clinical child spacing work.
2. Describe the important counseling considerations to keep in mind when discussing child spacing with individuals and couples.
3. Demonstrate basic counseling skills.

LEARNING ACTIVITIES

1. Listen to instructor presentation on the importance of counseling in child spacing work and the importance of communication skills in counseling.
2. In your work group, help develop a skills checklist for counseling individuals and couples about child spacing.
3. Join in class discussions and decide as a class on a single counseling skills checklist that incorporates the best from each of the individual work group checklists.
4. In a small group, prepare and present a role-play to show how to handle a counseling situation.
5. Join in class discussions, using the new counseling skills checklist as a guide.

2.1 COMMUNICATION SKILLS IN COUNSELING

Counseling simply means giving people advice and helping them decide what to do. It means listening to people and trying to understand their concerns and problems. In your clinical work you will have many opportunities to discuss child spacing with your patients. However, because child spacing and contraception are very personal subjects, the effectiveness of your discussions and counseling will depend on your communication skills.

Communication skills mean your ability to talk with people comfortably, listen to people attentively, and share information with them appropriately. Basic communication skills will make your counseling effective. You should develop the ability to:

- Understand people's feelings, views, and behavior
- Use words and expressions that local people understand and use themselves
- Express ideas clearly and in simple terms
- Listen closely to people so that you understand how they are feeling and what they know
- Ask people questions and let them ask you questions
- Help people make decisions

People's Feelings, Views, and Behavior

The subject of child spacing is a personal matter. People may be shy or unwilling to talk about their bodies, having children, or ways to prevent pregnancy. They may believe that these are subjects that are discussed only in the home. You must respect such feelings and beliefs. Be careful not to criticize people for what they believe or do. This is not helping them. You can help them most by listening to them and trying to understand how they feel. Answer their questions and show them that you are concerned about their health and their family's health. When they are ready to discuss child spacing with you, you will know it. Be patient. It takes time for feelings and especially behavior to change.

Do not criticize the simple home methods of contraception that people may be using. Although they may be less effective than other methods that you know about, they may be somewhat useful. If the people are willing to talk with you about their methods, use your knowledge of contraception to explain how other methods may be more effective. By asking questions and by talking with people, you are better prepared to help them choose an appropriate child spacing method.

You should know about local social customs. That is, you should know if it is acceptable for a man to talk with a woman about child spacing, or if a woman may talk to a man. You should be aware of how information is shared among community members. This knowledge may help you in communicating child spacing information.

Words and Expressions that Local People Use

Because of your special training as a mid-level health worker, you know many technical words and expressions. When you talk with people about child spacing, use words that they understand and use themselves. Explain things to people in terms that they will understand. For example, in explaining to a woman how oral contraceptives work, you need not talk about hormones and the menstrual cycle. Instead, you can talk about medicines that are made in the body and a woman's monthly changes. The important thing is that the person you are talking to understands you. You may have to explain something two or three different ways before the person understands you. It may be helpful for you to make a list of the common words and expressions that you hear so that you will be sure to use them the next time you talk with people.

Expressing Ideas Clearly

Sometimes, even if you use the right words to explain something your message is still not clear. You may not have thought enough about what you want to say, so your explanation is confusing. Think before you speak. Organize what you want to say in your mind first, then say it. Try to say it in direct but simple terms. For example, rather than saying, "Many women experience nausea and vomiting during the first three months on the pill," you might say, "If you take the pill, you will probably feel sick for the first three months or so." One way to find out if you are expressing ideas clearly is to simply ask

the person if what you are saying is clear to them. Or, ask the person to explain back to you what you have just been discussing. Always check with the other person to see if he or she understands before you go on to another idea. If you feel simple visual aids would help the person understand, use them.

Listening Closely and Carefully

Probably the most important communication skill for successful counseling is being able to listen. You must listen to people to know what they are really feeling or what they think. When you are with people in the clinic, show them that you are listening. Do not do other things, like writing, while they are talking. Put down your pen and paper and listen to what they are saying. If they are nervous, help them to feel more comfortable. If they are talking too fast or are having problems expressing themselves, ask them to relax and start again. Try not to sit behind a desk when you are talking with people. It separates you from the person you want to get to know.

Ask the person questions to make sure you heard him correctly. Ask him to clarify anything that you do not understand. Show him that you are interested in what he has to say. Restate what the person says to make sure you understand. Watch the person's eyes and body to see if he is uncomfortable talking with you. If he is, try to make him more comfortable by asking him what is bothering him or what would make him more comfortable. Do not interrupt people when they are talking. Wait until they are finished to make comments or ask questions.

Asking and Answering Questions

Allow individuals or couples you are counseling to ask questions. Your counseling should be like a conversation rather than a talk by you alone. The only way that people will learn all that they need to know about a child spacing method is to have all their questions answered. So, you should be prepared to answer as well as ask questions during counseling sessions.

Toward the end of the counseling session, ask a person if he or she has any questions. However, this is not the only time when questions should be asked. Encourage questions during the entire counseling session.

Do not be afraid to say that you do not know the answer to a question that someone asks. It is better to try to find out the correct answer

to a question than to give an answer that may not be correct. Also, if people want additional information about something, direct them to a place where they can get it or find it yourself for them.

Helping People Make Decisions

The purpose of your counseling in child spacing work is to help people make decisions about which methods are most appropriate for them. You need to know the person and also the child spacing methods that are available.

Before forming an idea of which child spacing method to recommend, you need some information about the person's previous experience. Ask:

“Have you practiced birth control before?”

“What method did you use?”

“Did you have any problems with that method?”

“In general, how did you feel about using that method?”

If a woman would like to use oral contraceptives or an intrauterine device, explain to her that these methods may cause problems for some women. Let her know that you will want to take her medical history and perform a physical examination on her before she makes a final decision to use one of these methods. If you find that using one of these methods may be risky for her, then you can suggest a safer method.

When you discuss a particular child spacing method with a couple or an individual, discuss the advantages and disadvantages of the method. Make sure that the couple is aware of how the method works and its side effects and possible complications. Give your opinion as to which method you feel is most appropriate for them. However, the decision about which method to be used should be made by the couple. Remember, you are there to help them make the decision by providing them with information and support.

Other Considerations

Keep in mind that people will not always be coming to you for information about contraceptive methods. In fact, some people in the area where you are working may never have heard about the idea of preventing pregnancy. Therefore, your counseling about child

spacing will be done not only in maternal and child health clinics and child spacing clinics, but also in general clinics.

You can include child spacing in your general clinical work. For example, when you are taking the medical history of patients who come to see you, you may ask them about which method of child spacing they are using. If they are not using anything, then you can pass on information about what is available. It may even be helpful to have some written information prepared for your patients who are able to read.

Your patients' religious and cultural beliefs may forbid them to use child spacing devices. If so, you will have to counsel them about natural methods. Also, you should know something about a person's family situation before giving advice about child spacing. For example, find out about the couple's attitude toward child spacing, how many children the couple plan to have, and whether the husband and wife have a steady income. These considerations will help you to effectively counsel those seeking child spacing help.

As mentioned earlier, both your communication skills and your technical knowledge of child spacing methods are necessary for effective child spacing counseling. To help you become an effective child spacing counselor, each discussion of a child spacing method in this module includes a section that outlines the advantages, disadvantages, and basic counseling points for that method. In addition, the learning activities in this module will give you practice at counseling about child spacing. As you learn about the various methods of child spacing that are available, think how you would use this knowledge to counsel someone.

REVIEW QUESTIONS

Counseling for Child Spacing

1. This unit discusses six basic communication skills that can help you in your counseling about child spacing. Briefly describe each of these skills.
2. One day while you are taking a medical history and performing a physical examination of a woman who came to the clinic, you ask her if she is using a child spacing method. She tells you yes, that she is using lemon juice and hot water right after intercourse. What would you say to the woman?
3. Write the following sentence in terms that a local person would understand. "A diaphragm used with spermicidal cream prevents sperm cells from going through the cervix into the uterus, and also kills sperm."
4. What would you advise a community health worker to do when listening to people who come to him for child spacing advice?

Unit 3

Natural Child Spacing Methods

STUDENT GUIDE

OBJECTIVES

1. Explain how these natural child spacing methods are used:
 - Abstinence
 - Male withdrawal
 - Lactation
 - Mucus ovulation
 - Rhythm
 - Temperature change
2. Describe some of the advantages and disadvantages of using natural child spacing methods.
3. Demonstrate how to counsel individuals and couples about natural child spacing methods, and how to teach people the techniques necessary to use these methods effectively.

LEARNING ACTIVITIES

1. Listen to a student presentation on natural methods of child spacing.
2. Join in class discussions.
3. In your work group, prepare and present a role-play about a person asking about a natural child spacing method.
4. Join in a role-play as the health worker counseling a person about a natural child spacing method.

Natural child spacing methods involve understanding and using the natural reproductive cycles and processes. Natural methods do not involve chemicals or artificial devices that prevent pregnancy. For example, if a woman knows the exact time when she is ovulating, she can prevent pregnancy by not having intercourse during this time. This is a natural method. Or a man can withdraw his penis from the woman's vagina before he ejaculates. This is also a natural method. Natural methods require a good deal of personal responsibility. The couple who chooses to use a natural method must learn to use the method correctly.

3.1 ABSTINENCE

One of the oldest methods of child spacing is abstinence. This means that the couple refrains from intercourse. Some cultures expect the mother and father to live apart for a year after the birth of a child. Other couples plan to live apart because of work or study. If a man and woman do not have intercourse, obviously the woman will not get pregnant.

3.2 MALE WITHDRAWAL

Another old and still common method of child spacing is male withdrawal. The male withdraws his penis from the vagina before he ejaculates. This method is dependent on the man knowing the right time for withdrawal. Even if the timing is correct, there is a risk of pregnancy because some sperm may be present in the moisture at the tip of the penis before the man ejaculates.

Advantages

Male withdrawal does not cost any money, it does not require any artificial devices, and it is easily understood.

Disadvantages

The couple may find intercourse slightly unsatisfactory or incomplete. The man requires self discipline to use the method effectively.

Counseling Points

The use of male withdrawal should not be discouraged or criticized, but for some patients it may be suggested that more reliable and satisfactory child spacing methods are available.

3.3 LACTATION

When a woman is breast-feeding, especially before menstruation has returned, the chances of her becoming pregnant are reduced. However, lactation is not reliable as a child spacing method. Therefore, another method should be used when intercourse is resumed.

Advantages

Lactation is a natural method and therefore does not require any artificial materials or chemicals.

Disadvantages

Lactation is not reliable as a child spacing method. It is not possible to predict exactly when a woman's menstruation will return after she gives birth. When menstruation finally does return, she will have ovulated already. A woman may become pregnant at the first ovulation. In this case she would go straight into the next pregnancy without having menstruated.

Counseling Points

If the baby is more than six weeks old when the couple resumes sexual intercourse, they should certainly not rely on lactation as a child spacing method. Advise couples to use a more effective method of child spacing as soon as they resume sexual intercourse.

Breast-feeding should be encouraged as much as possible on its own merits, but it is not a reliable child spacing method.

3.4 MUCUS OVULATION

The mucus ovulation method is based on the avoidance of sexual intercourse during the fertile period of a woman's cycle. The fertile period is that time just before and after ovulation. Ovulation usually occurs about fourteen days before the onset of menstruation.

A woman can identify her fertile period by noticing the changing characteristics of the mucus that is naturally secreted in her vagina during the menstrual cycle. By learning to observe and recognize the quality of the mucus, a woman can determine whether or not she may become pregnant on a particular day.

Immediately after menstruation, the woman should begin checking the mucus in her vagina. While learning, it is good if the mucus is checked several times during the day since the amount of mucus changes. The woman should be sure to first wash her hands with soap and water and clean her fingernails. She inserts two fingers into her vagina to pick up some mucus and then looks at it. After checking the mucus, the woman should wash her hands again.

In some cycles, menstruation is followed by one or more days of no noticeable mucus. The vagina will feel dry. As the cycle progresses, the dryness ends, and mucus appears. At this point the mucus is whitish or cloudy, and tacky.

As ovulation approaches, the mucus increases and becomes clear and stretchy, like raw egg white. The mucus may stretch 2 cm to 10 cm and be slippery and sticky. The mucus looks like this on peak days. The vagina is wet on peak days. Ovulation will occur within twenty-four hours after the last peak day ends. From the first sign of mucus until the fourth day after the peak day symptoms, the woman should avoid intercourse unless a contraceptive is used. She is most fertile at this time.

Unprotected intercourse may resume during her unfertile time. Her unfertile time begins the fourth day after the peak day symptoms and continues through menstruation. Mucus, if present, will be cloudy and white.

AUGUST

SUN	MON	TUES	WED	THURS	FRI	SAT
						1
2	3 menstruation begins	4	5	6	7	8 no mucus dryness
9 dryness no mucus	10 no mucus feeling of dryness	11 white mucus	12 white mucus	13 increase in mucus still white	14 mucus becoming clearer	15 PEAK DAY clear stretchy mucus
16 PEAK DAY clear stretchy mucus	17 PEAK DAY clear stretchy mucus	18 ovulation	19 cloudy mucus	20 cloudy mucus	21 no mucus	22 no mucus
23 no mucus	24 no mucus	25 no mucus	26 no mucus	27 no mucus	28 no mucus	29 no mucus
30 no mucus	31					

SEPTEMBER

SUN	MON	TUES	WED	THURS	FRI	SAT
		1 menstruation begins	2	3	4	5
6	7	8	9	10	11	12

IN THIS EXAMPLE, THE WOMAN SHOULD AVOID UNPROTECTED INTERCOURSE FROM THE 11 TH (DAY 9) UNTIL THE 22 ND (DAY 20). THIS IS THE UNSAFE PERIOD. THE SAFE PERIOD WOULD BE FROM AUGUST 23 TO SEPTEMBER 1.

Advantages

The mucus ovulation method has no side effects, if the woman's hands and fingernails are clean before inserting them into her vagina. It helps a woman and her partner become more aware of the natural cycles in the woman's body.

Disadvantages

Even when the method is practiced correctly, there is a risk of pregnancy. The method can be confused by abnormal discharge of mucus. Intercourse is strictly limited with this method.

Counseling Points

Remind women that the peak days may be recognized by wetness in the vagina. The quality or consistency of the mucus is much more important than the quantity. Counsel women how to record on a calendar the changes of the mucus. Women who have used the method successfully may teach other women to use the method. A woman can determine her fertile period more accurately by using a combination of mucus ovulation, rhythm, and temperature change methods.

3.5 RHYTHM

Like the mucus ovulation method, the rhythm method of child spacing is based on the avoidance of intercourse during the fertile period of the woman's cycle. The rhythm method determines the fertile and unfertile periods of a woman's cycle through calculations with numbers rather than watching physical signs like vaginal mucus or temperature changes.

The average woman menstruates once every four weeks. Ovulation occurs about fourteen days before the next menstruation begins. Therefore, you need to know the exact date a woman will have her next menstrual period to be able to calculate when she will ovulate. This calculation is easy for a woman with a regular twenty-eight day cycle. She ovulates fourteen days before each period and fourteen days after each period. However, for the woman who is irregular and has cycles of

varying lengths, it is more difficult to determine the time of ovulation. The rhythm method may be used to overcome this difficulty.

It is rare for a woman to have a consistent pattern of menstrual cycles. She should write down the lengths of twelve menstrual cycles in a row before trying to calculate her fertile and unfertile days. In this way, she is taking into account the earliest and the latest possible days of ovulation. The woman should always count the first day of menstruation as Day 1 of her cycle.

How to do the Calculations

The chart shows a woman's record of the lengths of twelve menstrual cycles. The shortest cycle was twenty-eight days and the longest was thirty-four days.

FIRST DAY OF MENSTRUATION	DAY BEFORE NEXT MENSTRUATION BEGINS	LENGTH OF CYCLE	
Jan 1	Jan 30	30 days	
Jan 31	Feb 27	28 days	SHORTEST
Mar 1	Mar 31	31 days	
April 1	May 1	31 days	
May 2	June 4	34 days	LONGEST
June 5	July 6	32 days	
July 7	Aug 4	29 days	
Aug 5	Sept 3	29 days	
Sept 4	Oct 4	31 days	
Oct 5	Nov 4	31 days	
Nov 5	Dec 4	30 days	
Dec 5	Jan 2	29 days	

RECORD OF TWELVE MENSTRUAL CYCLES

Do the following arithmetic to calculate fertile and unfertile days for a woman's next cycle. First calculate the first fertile day. Subtract 18 from the number of days in the shortest cycle. In the example, this would be $28 - 18 = 10$. Cycle day 10, or January 12, will be her first fertile day.

Now, subtract 11 from the number of days in the longest cycle. In the example, this would be $34 - 11 = 23$. Cycle day 23, or January 25, will be the woman's last fertile day. Remember! Cycle day 1 is the first day of flow.

The numbers 11 and 18 are used in the rhythm calculations because the fertile time in an average cycle is between 11 and 18 days before the next menstruation begins. Although a woman usually ovulates fourteen days before the next menstruation begins, she must also allow time before and after she ovulates for the time the egg and the sperm can live.

For the woman in the example, her fertile days would be from January 12 to January 25. The unfertile days would be from January 3 to January 11 and from January 26 up to nine days after the start of the next menstruation. As a health worker, you would advise the woman to use a contraceptive during her fertile days. Or she and her partner could abstain from intercourse during this time. You can show the woman how to write down her calculations on a calendar.

JANUARY – Thirteenth Month

S	M	T	W	Th	F	S
						1
	FIRST DAY OF FLOW					
2	③	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

CALENDAR SHOWING FERTILE DAYS (SHADED AREAS) FOR THE THIRTEENTH MONTH OF THE WOMAN IN THE EXAMPLE

Of course, if a woman has a regular menstrual cycle, it is not necessary for her to observe twelve cycles. For example, say a woman with a regular twenty-eight day cycle would like to use the rhythm method. How would you help her with the calculations? What days would she be fertile? Which days would she be unfertile? Use the space below and the calendar to show how you would calculate her unfertile and fertile days.

18 subtracted from the
shortest cycle =

fertile days =

11 subtracted from the
longest cycle =

unfertile days =

S	M	T	W	Th	F	S
						FIRST DAY OF FLOW ①
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

If you calculated the first fertile day as Day 10 and the last fertile day as Day 17, you are correct. You would advise the woman or couple to avoid unprotected intercourse between Day 10 and Day 17. Begin counting on Day 1, the first day of menstruation. Remember, however, that this woman always has a regular twenty-eight day cycle.

A woman who does not have regular cycles should calculate her unfertile days based on her last twelve menstrual cycles. She should make this calculation every month.

Advantages

The rhythm method does not require any mechanical aids or pills. It can be taught by women who use the method themselves. There are no side effects. It helps a woman become more aware of her body's natural cycles.

Disadvantages

Because of the great individual variations in women's cycles, rhythm is less reliable than some other methods. Intercourse is restricted to a limited time in the menstrual cycle. The rhythm method must be practiced correctly to be effective. Even when the method is practiced correctly, there is a risk of pregnancy.

Counseling Points

Advise women with irregular cycles that the rhythm method is not the most suitable method for them. Do not recommend the rhythm method to a woman who has just had a child, since ovulation after pregnancy will not be preceded by a menstrual period. Women who have used the rhythm method successfully may teach other women. Include partners in counseling sessions. Teach them how to do the calculations, too. This method requires self-discipline and an ability to use the method correctly. Consider alternative methods for those who do not appear to have these abilities. A woman can determine her fertile period more accurately by using a combination of rhythm, mucus ovulation, and temperature change methods.

3.6 TEMPERATURE CHANGE

Slight temperature changes occur in a woman's body when she ovulates. Just before ovulation, the temperature goes down a little bit. After ovulation, it rises several tenths of a degree and remains up until a day or so before menstruation.

A woman may observe this temperature change by using a special thermometer that shows tenths of degrees and has wide markings for easy reading. The woman should read and record her temperature just as she wakes up in the morning. Ovulation probably took place at the beginning of the rise in temperature, if the temperature rise lasts for at least three days, and if the woman has no illness or infection.

A couple can have unprotected intercourse three days after the rise in temperature until the woman menstruates, a total of about ten days. The temperature change method is not useful in determining unfertile days before ovulation.

Advantages

Temperature change is a natural method. It helps a woman become more aware of her fertility. There are no side effects.

Disadvantages

This method requires a special thermometer that measures temperature in tenths of degrees. Since temperature is of no use in determining safe days before ovulation, intercourse is strictly limited. An infection or illness can cause a rise in temperature that is not related to ovulation.

Counseling Points

Advise the woman to write down her temperature immediately after waking, before she eats, drinks, or smokes. Advise her to keep the thermometer under her tongue with her mouth closed for four to five minutes. A woman can determine her fertile period more accurately by using a combination of temperature change, mucus ovulation, and rhythm methods.

3.7 SUMMARY

The effectiveness of natural methods of child spacing depends both on the motivation of the woman or the couple and on how well the methods are taught. If you do not teach the method properly or if the people do not appear willing to use the method correctly, then you are wasting your time and theirs.

An advantage of all the natural methods discussed here is that they are based on the natural cycles and rhythms in the human body. Understanding how the methods work is understanding how human reproduction works. This knowledge can be used to increase the effectiveness of some of the other child spacing methods.

Natural methods require cooperation between partners. Therefore, both the man and the woman should learn these methods. Remind couples that they need not use only natural methods. For example, during the fertile days of a woman's cycle a condom may be used rather than restricting intercourse altogether. If a couple chooses to use only natural methods, they must avoid intercourse during the woman's fertile days.

REVIEW QUESTIONS

Natural Child Spacing Methods

1. What are some of the disadvantages of using male withdrawal as a child spacing method?
2. Explain the mucus ovulation method of child spacing.
3. What points would you include in counseling a woman about the use of mucus ovulation as a child spacing method?
4. Why is it useful for a woman to write down the lengths of twelve menstrual cycles in a row before using the rhythm method of child spacing?
5. A woman has written down twelve menstrual cycles in a row. She found that the shortest cycle was twenty-three days, and the longest cycle was thirty-two days. When should she avoid unprotected intercourse during her next cycle?

REVIEW EXERCISE

Child Spacing Reference Chart

1. This review exercise will be continued throughout your study of the Child Spacing Module. If you do each part of the exercise carefully, you will have a valuable tool to use in your clinical child spacing work. You will be constructing a child spacing reference chart. This chart will include the essential information that will help you discuss child spacing with your patients. The first thing you should do for this exercise is find a large piece of paper to put your chart on. Flipchart paper would be good. Then draw a chart on the paper and label it.

Method of Contraception	How it Works	Advantages	Disadvantages and Contraindications	Side Effects Common Complaints	Major Counseling Points	Page in Text for more information
ABSTINENCE						
MALE WITHDRAWAL						
LACTATION						
RHYTHM						
MUCUS OVULATION						

TEMPERATURE CHANGE							
SPERMICIDES							
CONDOMS							
DIAPHRAGM							
IUD							
ORAL CONTRACEPTIVES							
VASECTOMY							
TUBECTOMY MINI-LAPAROTOMY & LAPAROSCOPY							

After you learn about each of the methods listed here, fill in the appropriate information. When, you have finished the Child Spacing module, you will have a completed reference chart to use in your work. For this unit, fill in the information on your chart for the natural child spacing methods.

Unit 4

Chemical and Barrier Methods of Child Spacing

STUDENT GUIDE

OBJECTIVES

1. Explain how these chemical and barrier methods of child spacing are used:
 - Spermicides
 - Condoms
 - Diaphragms
2. Describe how to find the correct size diaphragm for a woman and teach her how to use and care for it.
3. Describe some of the advantages and disadvantages of using chemical and barrier methods of child spacing.
4. Demonstrate how to counsel individuals and couples about chemical and barrier methods of child spacing.

LEARNING ACTIVITIES

1. Review child spacing reference charts.
2. Listen to a student presentation on chemical and barrier methods of child spacing.
3. Join in class discussion.
4. Listen to instructor presentation on finding the correct size diaphragm for a woman and teaching her how to use and care for it.
5. In a small group, prepare and present a role-play to show how to counsel an individual or couple about spermicides, condoms, or diaphragms.

4.1 SPERMICIDES

Chemical methods of child spacing refer to a number of chemical substances that kill sperm. These substances, known as spermicides, may be mixed with creams, gelatin, some form of jelly, or aerosol foam.

Spermicidal foam is a white cream that comes in a pressurized can like shaving cream. Spermicidal creams and jellies usually come in a tube. An applicator is needed to use these spermicides. The applicator is usually packaged with the can or tube of spermicide. The effectiveness of foam, cream, and jelly is based mostly on their sperm killing action. To a lesser extent, they also create a physical barrier that blocks the sperm from entering the uterus through the cervix. Foam forms a more effective physical barrier than cream or jelly.

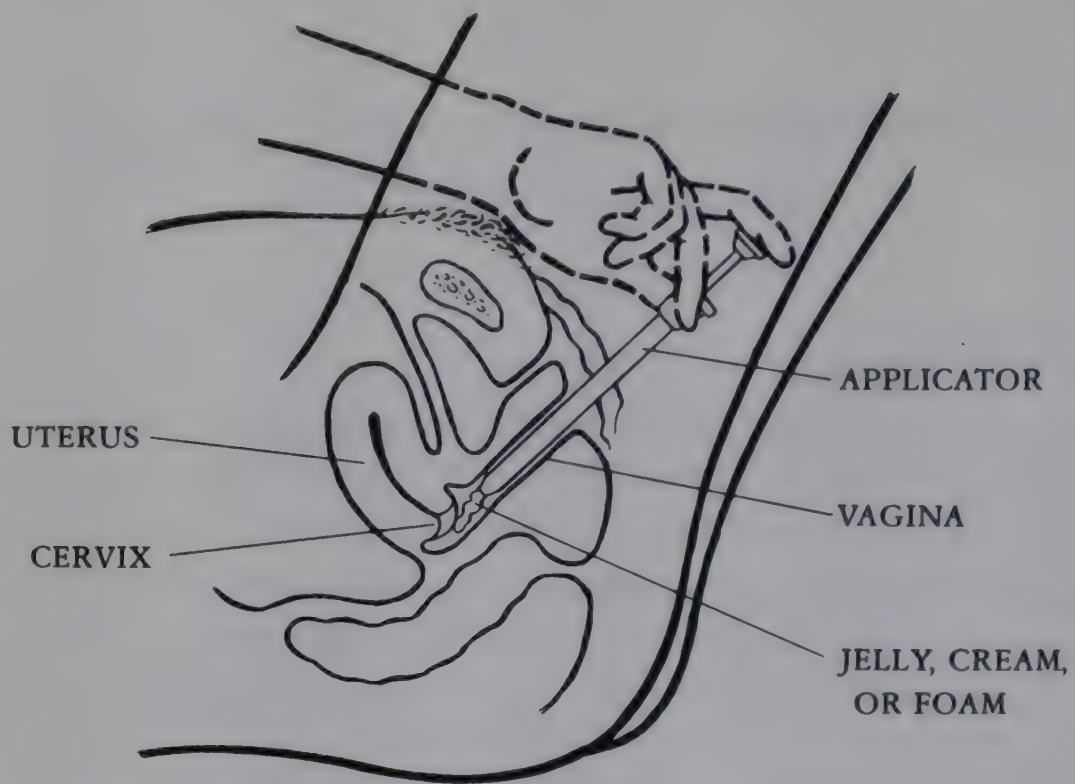
To fill an applicator with foam, first shake the can vigorously to mix the chemicals. Put the applicator on top of the can and press down to force the foam from the can into the applicator. The plunger part of the applicator will be pushed up. Cream or jelly is simply squeezed from the tube into the applicator.

Then, while the woman is lying down, she spreads her labia with one hand. With the other hand she inserts the applicator about three to four inches into her vagina. When she pushes the plunger, the spermicide will be deposited inside her vagina near the cervix.

The woman should use two full applicators of spermicide each time she has intercourse. She should insert the spermicide within fifteen minutes before intercourse. She should leave the spermicide in her vagina for six to eight hours after intercourse.

Advantages

Spermicides are quick and easy to use, and no physical examination is necessary.



INSERTING THE SPERMICIDAL FOAM

Disadvantages

Spermicides are not effective enough to depend on alone. They are best used in combination with a condom, a diaphragm, or as a supplement with the first month of oral contraceptives. They may be irritating to the vagina and penis. Inserting the spermicide briefly interrupts sexual activity. Spermicides may be expensive.

Counseling Points

Couples should be advised that spermicides are not effective enough when used alone. However, in combination with other methods, they can be very effective. For example, recommend to the couple that they use a condom in addition to foam. Jellies and creams should be used in combination with a diaphragm. Remind couples that foam, cream, or jelly must be used every time intercourse takes place.

4.2 CONDOMS

The barrier methods of child spacing are devices that physically block the sperm and the egg from joining. That is, they are barriers that prevent the sperm from traveling up the cervix, through the uterus, and into the fallopian tubes. Diaphragms and condoms are barrier methods.

A condom is a thin rubber sheath that is used to cover the erect penis. It is designed to keep the semen from getting into the woman's vagina. A new condom is required each time intercourse takes place. Condoms usually come rolled up in small packages.

When used, the rolled condom is placed over the tip of the erect penis and unrolled toward the base of the penis. Condoms can be either teat-ended, so that there is a space for the semen, or plain-ended. When using a plain-ended condom, the man should leave a small space at the top to catch the semen and help prevent the condom from bursting.

After intercourse, the man should hold the condom in place on his penis when withdrawing from the vagina. This will help prevent any of the semen from spilling out into the vagina.

Advantages

Condoms are fairly inexpensive, readily available, and easy to use. Condoms provide some protection against venereal disease. There are no side effects from using a condom. Used every time as directed, good quality condoms can be ninety-seven percent effective. When used with spermicidal foam, condoms can be nearly one hundred percent effective. If a man tends to ejaculate too quickly, the condom can decrease the stimulation of his penis enough to help delay ejaculation and prolong intercourse.

Disadvantages

The condom must be used right at the time of intercourse. For some couples, this ruins the mood. The condom often makes the feeling in

the man's penis less sensitive. Condoms that are not lubricated can irritate a woman's vagina.

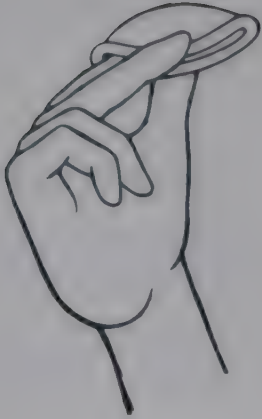
Counseling Points

Advise couples to use spermicidal foam with condoms. The joint use of foam and condoms is a very effective contraceptive method. Lubricants help prevent tearing of the condom and irritation of the vagina. Warn couples never to use petroleum jellies, such as Vaseline, as a lubricant. The jelly will cause the condom to weaken and tear. Tell the couple that the condom must be rolled onto the erect penis before the penis is in the vagina, not just before ejaculation. Explain that the man may discharge a few drops of semen before he ejaculates. Advise couples to store condoms away from heat. Heat will cause the thin rubber to melt. Also remind them to look for the expiration date on the package to make sure they do not use a condom that is old and potentially less effective.

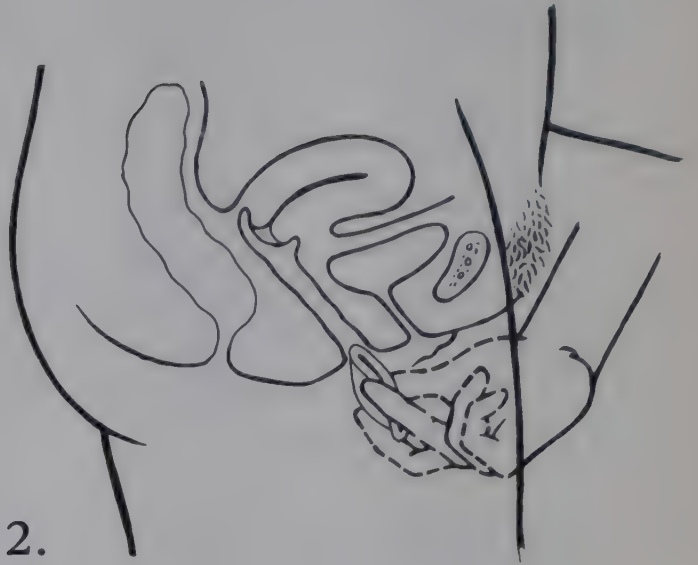
4.3 DIAPHRAGMS

A diaphragm is a shallow cup of soft rubber. It has a flexible rim with a metal spring in it to help the diaphragm maintain its shape. When properly fitted and inserted, the diaphragm fits closely over the cervix and acts as a barrier against sperm. It is important to realize that a diaphragm does not provide a complete barrier against sperm. Therefore, it is vital that a diaphragm always be used with a spermicidal cream or jelly.

A diaphragm must be fitted to the size of the woman's cervical area. See the skill checklist, Finding the Correct Size Diaphragm for a Woman. A diaphragm that is the right size fits firmly behind the cervix and pubic bone. It should feel comfortable to the woman. A diaphragm should stay in place when a woman passes urine or moves her bowels. The cervix should remain covered.



1.



2.



3.



4.

INSERTION OF THE DIAPHRAGM AND CORRECT POSITION AFTER INSERTION.

Before inserting the diaphragm, spermicidal jelly or cream should be squeezed into the diaphragm cup. When the diaphragm is correctly inserted, it holds the spermicide up against the cervix. In this way the sperm cannot pass into the cervical canal. They are blocked by the diaphragm. Furthermore, any sperm that swim around the diaphragm are killed by the spermicide. Any sperm that remain in the vagina after intercourse will die in about eight hours.

Spermicides lose their effectiveness after two hours. So the diaphragm must be inserted within two hours of intercourse. Actually, it is best if the woman inserts the diaphragm even closer to the time of intercourse. After intercourse the diaphragm must be left in place for at least six to eight hours. It may be left for as long as twenty-four hours.

The diaphragm must be used correctly to be effective. It must be inserted properly and used with spermicidal cream or jelly. Be sure that the woman understands how to use the diaphragm. Before she leaves the clinic, she should demonstrate to you that she knows how to properly insert the diaphragm. See the skill checklist, *Teaching a Woman to Use a Diaphragm*.

Advantages

The diaphragm has no side effects or dangers. It is effective if it is correctly fitted, used with a spermicide, and properly inserted.

Disadvantages

Use of the diaphragm requires the facilities necessary for proper personal hygiene such as clean water and environment. One must remember to use the diaphragm every time intercourse takes place. The diaphragm must be inserted before intercourse, so using it requires some planning. Some women cannot use the diaphragm because their cervix is tilted and does not allow proper coverage.

Counseling Points

Advise the woman that she must have a pelvic examination so she can be fitted for a diaphragm. Tell her that she will be taught how to use the diaphragm and must demonstrate that she knows how to use it before she leaves the clinic. Petroleum jellies, such as Vaseline, should never be used with the diaphragm. The jelly will cause the diaphragm rubber to weaken and tear.

Show the woman how to wash her diaphragm with mild soap and water, rinse it, and carefully dry it. Tell her to keep the diaphragm out of bright light and heat. She should check the diaphragm for holes by holding it up to a light or filling it with water. She should return to the clinic each year so you can check the fit and condition of the diaphragm.

Advise the woman that she will need a new diaphragm if she gains or loses more than 5 kg, or after pregnancy.

REVIEW QUESTIONS

Chemical and Barrier Methods of Child Spacing

1. Explain how foam prevents conception.

2. Imagine that you are explaining to a woman how spermicidal foams, creams, and jellies are placed in the vagina. What would you say?

3. Why is it important to advise people to use spermicides with other methods of child spacing?

4. A man wants to know how to use a condom. What would you tell him?

5. TRUE (T) or FALSE (F)
 - ___ Condoms are free of medical side effects.
 - ___ A diaphragm must be carefully fitted to the individual woman by a trained person.
6. The condom prevents conception because it: (Check one.)
 - ___ Kills the sperm
 - ___ Prevents ovulation
 - ___ Prevents the production of sperm
 - ___ Blocks the sperm from reaching the ovum

7. A diaphragm must be inserted not more than: (Check one.)
- _____ Two hours before intercourse
 - _____ One hour before intercourse
 - _____ Thirty minutes before intercourse
8. Outline some of the important points you would include when counseling a woman about the use of a diaphragm.

REVIEW EXERCISE

Chemical and Barrier Methods of Child Spacing

1. Fill in the information on your child spacing reference chart for spermicides, condoms, and diaphragms.

SKILL CHECKLIST

Finding the Correct Size Diaphragm for a Woman

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors may use it when they evaluate how well students provide clinical child spacing services.

After observing a student, enter a rating in the appropriate column.

To measure a woman for the correct size diaphragm you should:

- Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

	YES	NO	RATING	COMMENTS
1. Gather the supplies needed for a pelvic examination and a set of diaphragms sized from 50 mm to 105 mm				
2. Perform a complete pelvic examination to make sure the pelvis is normal				
3. Find the correct size diaphragm. Try different sizes. If the woman is average in size, try diaphragm number 75				
4. Insert the diaphragm by folding the flexible ring so that the cup portion of the diaphragm is on the inside. Then place the diaphragm in the vagina so that it covers the cervix like a cup. The back part of the diaphragm should fit firmly behind the pubic bone. With the diaphragm in place, the woman should feel comfortable				

	YES	NO	RATING	COMMENTS
5. When the diaphragm is in place, have the woman cough, walk around, squat, or bear down to be sure that there is no discomfort				
6. If the diaphragm you tried is too small, it will move around in the vagina. Remove it and try a larger one. If the diaphragm is too large, the woman will feel uncomfortable. In this case, remove it and try a smaller one				

SKILL CHECKLIST

Teaching a Woman to Use a Diaphragm

The checklist has two purposes:

- 1) Students may use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors may use it when they evaluate how well students provide clinical child spacing services.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When you teach a woman to use a diaphragm:

	YES	NO	RATING	COMMENTS
1. Talk with the woman about her anatomy. Explain the purpose of the diaphragm as a barrier method of child spacing. Show her how to feel her own cervix				
2. Demonstrate to the woman how to use the spermicidal jelly or cream with the diaphragm. Explain the importance of the spermicide while having the woman squeeze the spermicide into the cup of the diaphragm that she has been fitted for				
3. Explain to the woman that she may put the diaphragm in place while she stands up or lies down				
4. Show her how to fold the flexible ring of the diaphragm. Then demonstrate how she should put the diaphragm into				

	YES	NO	RATING	COMMENTS
the vagina with one hand, while holding the labia apart with the other hand				
5. Explain to the woman that she should check the position of the diaphragm once it is in the vagina				
6. Have the woman check to see if the diaphragm is in position so that a. It covers the cervix b. The back part of the diaphragm is behind the cervix c. The front part of the diaphragm fits behind the pubic bone				
7. Show the woman that to remove the diaphragm she needs to catch the front part of it with a finger and pull it out				
8. Have the woman practice inserting, checking, and removing the diaphragm so that she is comfortable doing so before leaving the clinic				
9. Explain to the woman that she must use the diaphragm every time she has intercourse. Tell her that the diaphragm must be inserted no more than two hours before intercourse. Advise her that it is best if she inserts the diaphragm even closer to the time of intercourse. Tell her to leave the diaphragm in place for six to eight hours after intercourse				

	YES	NO	RATING	COMMENTS
10. Remind the woman of the importance of the spermicidal jelly or cream. Repeat that she should squeeze spermicide into the diaphragm cup before she inserts the diaphragm				
11. Explain that the diaphragm should not be used unless it can be washed with soap and water after each use				
12. In addition, explain that petroleum jellies, such as Vaseline, should not be used with a diaphragm. The jelly will cause the diaphragm rubber to weaken and tear				
13. Show the woman that the diaphragm may be checked for holes by holding it up to a light				
14. Ask the woman to return to the clinic in two weeks with the diaphragm in place for a recheck. Recommend that the woman and her partner use a back-up method of child spacing, such as condoms, during the next two weeks				
15. Finally, ask the woman if she has any questions or concerns that she would like to talk about. Tell her that she must use the diaphragm properly for it to be an effective method. Caution her that when she uses the diaphragm she should be careful to follow all the steps you have taught her				

Unit 5

Intrauterine Devices (IUDs)

STUDENT GUIDE

OBJECTIVES

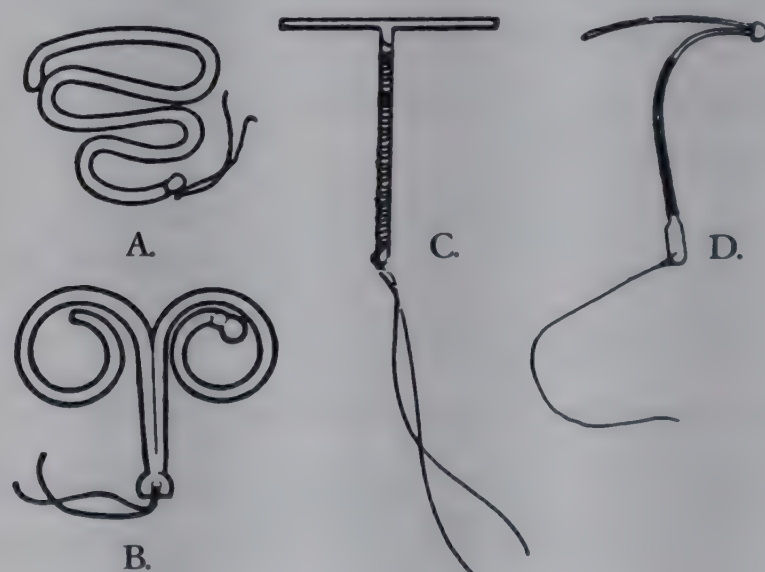
1. Explain how the intrauterine device, or IUD, may work to prevent conception.
2. Describe the advantages and disadvantages of using an IUD.
3. Explain why you should take a medical history and perform a physical examination, including a pelvic examination, of a woman intending to use an IUD.
4. Outline the important questions to ask a woman who intends to use an IUD.
5. Describe the physical examination procedures necessary before inserting an IUD, and explain why they are done.
6. Demonstrate how to perform a pelvic examination.
7. Demonstrate how to insert and remove an IUD.
8. Explain the important considerations to keep in mind when counseling a woman about an IUD.

LEARNING ACTIVITIES

1. Review medical history and physical examination procedures, including a pelvic examination, and discuss the importance of these procedures in clinical child spacing work.
2. Listen to a student presentation about the IUD.
3. Participate in class discussions.
4. View and discuss a slide presentation about the procedures for inserting and removing an IUD.
5. Observe procedures for inserting and removing an IUD.
6. Practice the procedures for inserting and removing an IUD.
7. Participate in an informal question and answer exercise about counseling patients concerning an IUD.

5.1 DESCRIPTION OF IUDs

Most intrauterine devices, or IUDs, are small plastic devices of different shapes and sizes. An IUD prevents conception when it is placed in a woman's uterus. IUDs have one or two threads attached to them. The threads extend from the inside of the uterus, through the cervix, to the upper part of the vagina. The threads are used to remove the IUD and also to check whether the IUD is in place in the uterus.



SOME DIFFERENT TYPES OF IUDs

A. LIPPES LOOP, B. SAF-T-COIL, C. COPPER T, D. COPPER 7

5.2 HOW IUDs WORK

Although IUDs have been used for many years, no one is absolutely sure how they work. Some people believe that the IUD causes a reaction in the uterus that prevents the lining of the uterus from developing properly. Therefore, a fertilized egg might not be able to implant itself in the uterine lining.

An IUD may inflame the uterus. White blood cells, which are present in the uterus because of the inflammation, may kill the sperm or the egg.

The shape of the IUD in the uterus may prevent sperm from traveling up to the fallopian tubes.

The IUDs with copper on them probably prevent conception because the copper causes a chemical reaction in the uterus. This chemical reaction may interfere with the implantation process of the fertilized ovum. It may also interfere with the ability of the sperm to travel to the fallopian tubes.

5.3 CONTRAINDICATIONS

Some women have problems that make it unsafe for them to use an IUD. You need to know a woman's medical history in order to make sure that this method is safe for her. Ask a woman who intends to use an IUD:

- “Do you have painful menstruation or heavy bleeding when you menstruate, or do you have bleeding between periods?”
- “Do you have now or have you ever had gonorrhea or a severe infection in your pelvic area?”
- “Do you have now or have you ever had any heart disease?”
- “Do you have now or have you ever had any anemia?”
- “Do you have sickle cell disease?”

If she has a history of any of these problems, she should not use an IUD. Help her choose a method that is safer and more appropriate for her.

5.4 PREPARING TO INSERT AN IUD

An IUD must be inserted by a trained person. See the skill checklist, Inserting an Intrauterine Device (IUD). An IUD must be inserted under sterile conditions so that the uterus is not infected. The uterus may react to insertion of an IUD by cramping and causing some pain to the woman. However, as you gain experience at inserting IUDs, you will be able to lessen any pain that a woman may experience.

You should insert an IUD when a woman is menstruating or one or two days after she has finished menstruating. This timing will ensure that the woman is not pregnant. An IUD insertion can cause a miscarriage with possible severe bleeding and infection. Also, the opening of the woman's cervix is a little larger when a woman is menstruating.

Begin preparations to insert an IUD only after you are sure there are no medical history contraindications to the woman using an IUD. Then, gather all of the necessary supplies and instruments and make sure that they are sterile. Boil the metal instruments and the inserter for twenty minutes in a sterilizer or a pan. The plastic instruments cannot be boiled but instead should be soaked in iodine solution for twenty minutes before they are used.

Prepare the IUD for insertion. Put on sterile gloves and place the IUD into the inserter or introducer. Place the prepared IUD on a sterile cloth.

Next, explain to the woman what you are going to do. Tell her that you will inform her of what you are doing during every step of the procedure.

Perform a pelvic examination. Observe the position, size, and mobility of the uterus. This information will aid in determining the direction of the IUD insertion. Look for these abnormal physical conditions that would prevent the woman from using the IUD:

- Pregnancy

- Vaginitis or infections of the uterus

- Cervical erosion or cervical mass

- Tumors

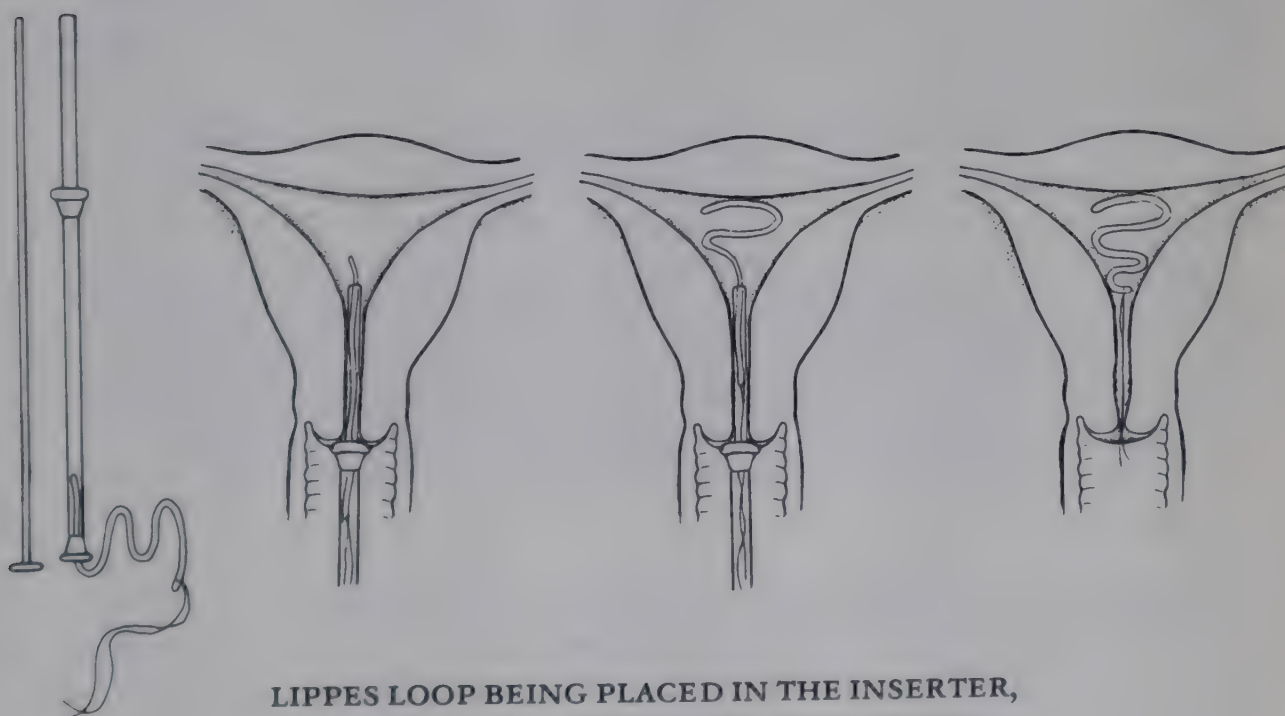
- Deformities of the uterus

If there are no abnormal physical conditions, you may proceed. With the woman in a position for a pelvic examination, wipe the outside of the vagina from front to back with iodine solution. Insert the speculum into the vagina the same way you do in a pelvic examination. Make sure you can clearly see the cervix between the blades of the speculum.

Clean the cervix with a sterile sponge dipped in iodine solution. Tell the woman she may feel a cramp with this next step. Then, attach the tenaculum to the front lip of the cervix.

5.5 INSERTING AN IUD

Hold the tenaculum in your left hand. Gently put the inserter, with the IUD in it, into the uterus to the level of the block guard on the introducer.



LIPPES LOOP BEING PLACED IN THE INSERTER,
THEN BEING INSERTED INTO THE UTERUS.

Slowly push the plunger on the inserter to unfold the IUD in the uterus. Withdraw the inserter and the plunger. Cut the IUD string so that it is 2.5 cm to 4 cm long outside the cervix.

Remove the tenaculum. Gently close the speculum and remove it from the vagina.

Ask the woman to wash her fingernails and hands with soap and water. Then have her feel the IUD string within her vagina. Explain to her that she should check the string about once a month at home to make sure that the IUD is still in place. Emphasize the importance of making this check with clean hands and fingernails.

Finally, ask the woman how she feels and whether she has any questions or concerns that she would like to talk about. Tell her to expect some slight bleeding. Tell her to return to see you if her bleeding is heavy or lasts longer than two weeks. She should also return to see you if she has a discharge from her vagina, a fever, or abdominal pain. These can be signs that the woman's body is not accepting the IUD or that the IUD has made a hole in the woman's uterus. Explain to her that the IUD should be checked every year. If the IUD comes out of the uterus, the woman should come to the clinic to be examined and possibly have another one put in.

A plastic IUD may be left in the uterus for years but it should be checked every six months to a year. The IUDs with copper should be replaced every two to five years because the copper wire dissolves or becomes weak and breaks off the IUD. See the skill checklist, Removing an Intra-uterine Device (IUD).

If a woman decides she wants another pregnancy, remove the IUD.

Advantages

An IUD is an effective method of contraception. It is not necessary to worry about any other method of contraception at the time of intercourse. The couple may have sex at any time. The IUD can be removed easily when the couple wants to have another baby.

Disadvantages

Sometimes a faulty insertion can cause a tear or hole in the uterus. The IUD then may slip out into the abdominal cavity. Uterine infection may occur if unsterile techniques and instruments are used. One of the major disadvantages of IUDs is that sometimes a woman's uterus will not allow the IUD to stay inside. In this case, the IUD is pushed out during the first three months of use, usually during the menstrual flow. Some women experience bleeding, cramping, and backache during the first few days of use. Some women have heavier menstrual flow and spotting of blood. Insertion of the IUD can be painful. Women who use IUDs have an increased risk of ectopic pregnancies.

Counseling Points

Advise the woman that the IUD is one of the most effective methods of contraception. For one hundred percent protection, it is possible to use a spermicidal foam, cream, or jelly with the IUD.

Women who have never been pregnant should be advised that a uterus that has not been stretched by pregnancy tends to react to an IUD with cramping, backache, and expulsion. Therefore, the IUD may not be the best method for them.

Tell women that the process of inserting an IUD may be slightly painful.

Sometimes a woman using an IUD conceives. If conception occurs, it usually happens within three months after the IUD is inserted. Also, an IUD is most likely to be expelled during the first three months after insertion. Thus, advise women that they may wish to use a back-up method of contraception such as spermicides or condoms for three months after the IUD is inserted.

Women who get IUDs must return for a check at least once a year. Advise women that they should check their IUDs after each menstrual period by feeling in their vagina for the strings that are attached to the end of the IUD. Emphasize strongly that infections of the uterus can occur very easily if the woman's hands and fingernails are not clean when she checks the string. Advise the woman to wash her hands with soap and water and to clean her fingernails before she checks the string. If the string feels too long, the IUD may be coming out. The woman should come to the clinic as soon as possible. If the woman cannot feel the string, the IUD may have moved up in the uterus or fallen out. She should come to the clinic immediately.

REVIEW QUESTIONS

Intrauterine Devices (IUDs)

1. Why is it important to take a medical history and perform a physical examination, including a pelvic examination, on a woman who intends to use an IUD?
2. There are a number of different theories about how the IUD works to prevent pregnancy. Explain some of the theories.
3. Why should an IUD be inserted during or shortly after a woman's menstrual period?
4. Describe at least three disadvantages of using an IUD.
 - a.
 - b.
 - c.
5. A woman to whom you gave an IUD comes back to you and says she thinks she is pregnant. She does not want another child. Explain what you would do and what you would say to the woman.
6. What are some of the major advantages of using an IUD as a method of child spacing?

REVIEW EXERCISE

Intrauterine Devices (IUDs)

1. Fill in the information on your child spacing reference chart for the IUD.

SKILL CHECKLIST

Inserting an Intrauterine Device (IUD)

The checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students provide clinical child spacing services.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When you insert an IUD
 in a woman, you
 should do the following:

	YES	NO	RATING	COMMENTS
1. Take the woman's medical history and perform a physical examination to make sure there are no contraindications to her using an IUD				
2. Gather these supplies: Lubricant Speculum Surgical gloves Sponges Lippes Loop or other IUD Inserter usually included in the IUD package Sponge holding forceps Tenaculum Two metal pans Long, curved scissors Bowl of aqueous iodine				

	YES	NO	RATING	COMMENTS
3. Prepare the instruments. All the instruments should be sterile. Boil the metal instruments for twenty minutes in a sterilizer or a pan. Plastic instruments cannot be boiled but should be soaked in iodine solution for twenty minutes before they are used				
4. Prepare the IUD. Put on sterile gloves. Put the IUD into the inserter and place it on a sterile or very clean cloth				
5. Explain what you are going to do. Tell the woman what you are doing during each step of inserting the IUD				
6. If you have not already done so, perform a bimanual examination. Look for any sign that the woman should not have an IUD				
7. With the woman in the position for a pelvic examination, wipe the outside of the vagina from front to back with iodine solution. Lubricate the speculum. Insert the speculum into the vagina the same way you do in a pelvic examination. Make sure you can clearly see the cervix between the blades of the speculum				
8. Clean the cervix with a sterile sponge dipped in iodine solution				
9. Tell the woman she may feel a cramp now. Attach the tenaculum to the front lip of the cervix				

	YES	NO	RATING	COMMENTS
10. Insert the IUD by holding the tenaculum in the left hand and gently putting the inserter, with the IUD in it, into the uterus to the level of the block guard on the inserter. Slowly push the plunger on the inserter to unfold the IUD in the uterus. Withdraw the inserter and the plunger. Cut the IUD string so that it is 2.5 cm to 4 cm long outside the cervix				
11. Remove the tenaculum. Gently close the speculum and remove it from the vagina				
12. Ask the woman to wash her hands and clean her nails, then feel the IUD string inside her vagina. She should check the string about once a month at home to make sure the IUD is still in place. Emphasize the importance of clean hands and fingernails when doing this				
13. Follow up. Ask the woman if she has any questions or concerns that she would like to talk about. Tell her to expect some slight bleeding. Tell her to return to see you if her bleeding is heavy or lasts longer than two weeks. She should also return to see you if she has a discharge from the vagina, a fever, or abdominal pain. Explain to her that the IUD should be checked every year. If the IUD comes out of the uterus, the woman should come to the clinic to be examined and possibly have another one put in				

SKILL CHECKLIST

Removing an Intrauterine Device (IUD)

This checklist has two purposes:

- 1) Students should use it as a guide for checking their own skills or other students' skills.
- 2) Supervisors should use it when they evaluate how well students provide clinical child spacing services.

After observing a student, enter a rating in the appropriate column.

Rating: 1 = Inadequate
 2 = Needs improvement
 3 = Satisfactory
 4 = Above average
 5 = Excellent

When you remove an IUD from a woman, follow these steps:

YES NO RATING COMMENTS

1. Gather lubricant, speculum, surgical gloves, and a long forceps				
2. Explain to the woman what you are going to do and why. Tell her that you will inform her when you are going to do each of the steps involved				
3. Have the woman lie in the position for a pelvic examination. Wipe the outside of the vagina with iodine solution and insert the speculum the same way you do when you insert an IUD				
4. After you can see the cervix and the IUD string, grasp the string with the long forceps. Gently pull the string and the IUD will come out				

	YES	NO	RATING	COMMENTS
5. Examine the IUD carefully. Be sure that you have removed all of it. Then remove the speculum				
6. If the string has disappeared, refer the woman to a doctor				
7. Answer any questions the woman may have. Ask her whether she wants another contraceptive method. If she does, then discuss other methods with her				

Unit 6

Oral Contraceptives

STUDENT GUIDE

OBJECTIVES

1. Describe how oral contraceptives prevent conception.
2. Explain the advantages and disadvantages of using oral contraceptives.
3. Demonstrate how to counsel a woman about the use of oral contraceptives.
4. Explain why you should take a medical history and perform a physical examination of a woman intending to use oral contraceptives.
5. Outline the important questions to ask a woman who intends to use oral contraceptives.

LEARNING ACTIVITIES

1. Review child spacing reference charts.
2. Listen to a student presentation about oral contraceptives.
3. Join in class discussions.
4. In a small group, prepare and present a role-play to show how to counsel women and couples about oral contraceptives.

6.1 HOW ORAL CONTRACEPTIVES WORK

Oral contraceptives are made of synthetic hormones. Hormones are chemicals produced by glands in the body. These chemicals affect the function of various parts of the body. For example, estrogen and progesterone are two hormones produced by a woman's ovaries. These hormones affect the uterine lining, the fallopian tubes, the cervix, the breasts, and the development of eggs in the ovaries.

When there is a low level of these hormones in a woman's body, as there is during menstruation, an egg begins to develop in one of the ovaries. The egg is later released at ovulation. When there is a high level of these hormones, as there is when a woman is pregnant, an egg does not develop in the ovary. Therefore, ovulation does not occur.

Oral contraceptives are based on this body chemistry. The most common type of oral contraceptive is the combination pill. This pill contains synthetic estrogen and progesterone. When a woman uses this contraceptive, she adds hormones to the ones that already exist in her body. The total amount of hormones in her body increases. The estrogen stops the development and release of the ovum. The progesterone increases the thickness of the cervical mucus and keeps the uterine lining from developing properly. Oral contraceptives create conditions in the body that are similar to those that go along with pregnancy. The combination pill is very effective in preventing conception.

6.2 CONTRAINDICATIONS

Some rare but serious side effects can occur in women using oral contraceptives.

Oral contraceptives can aggravate old problems, make present problems worse, or cause new problems for the woman who is susceptible. Therefore, you will want to have a thorough knowledge of a woman's

health before advising her to use oral contraceptives. When you take the medical history of a woman who would like to use oral contraceptives, ask:

“Do you have now or have you ever had any problems with blood clotting or inflammation of the veins in your legs?”

“Do you have now or have you ever had a problem with lumps in your breasts or breast cancer?”

“Do you have now or have you ever had any problems with high blood pressure?”

“Do you have now or have you ever had problems with headaches that are constant or severe?”

“Do you have any history of liver disease?”

“Do you have any history of heart disease?”

“Have you ever had cancer of the cervix or uterus?”

“Have you ever had vaginal bleeding for more than one week?”

Oral contraceptives can make any of these conditions worse. These conditions can be life threatening. A woman should not use oral contraceptives if she has a history of these conditions. Also, ask if she is breastfeeding. Oral contraceptives can decrease the production of milk in a lactating woman. Therefore, do not give oral contraceptives to a lactating woman.

If there are no contraindications from the woman's medical history, give her a physical examination, including a pelvic examination. Look for these signs or conditions:

Pregnancy

Clotting or inflammation of the veins in the legs

Heart disease

High blood pressure

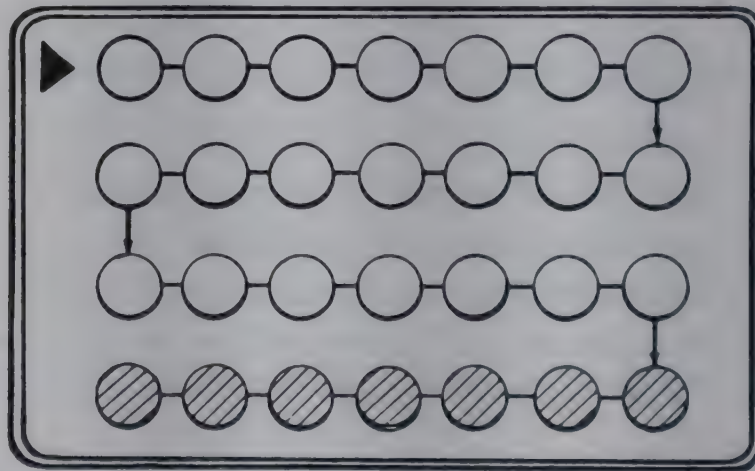
Cancer of the breast, as indicated by lumps in the breast itself or in the underarm

Cancer of the cervix or uterus

If you find any of these conditions, the woman should not use oral contraceptives. Advise the woman about her condition and care for it as outlined in the Patient Care Guides. Help the woman choose a safer, more appropriate child spacing method.

6.3 HOW TO USE ORAL CONTRACEPTIVES

Before recommending oral contraceptives to a woman, make sure there are no contraindications to her using them. Once you and the woman decide that oral contraceptive pills are the best child spacing method for her, teach her how to use them. Show her a packet of pills and give her the following instructions:



AN EXAMPLE OF A PILL PACKET AND HOW THE PILLS ARE ARRANGED. THERE ARE 28 PILLS IN EACH PACKET; 21 ARE WHITE AND 7 ARE BROWN.

Take one pill every day

Begin with the first white pill five days after menstruation begins

Take one pill every day, following the line on the packet

Take all of the white pills before starting the brown ones

You will menstruate while taking the brown pills

Continue taking a pill every day until the packet is finished

Two days before finishing the first packet, return to the clinic for more packets and a follow-up visit

Start a new packet, beginning with the first white pill, the day after finishing a packet

If you forget to take a pill for a day, take the forgotten pill as soon as you remember it. Also take the regular pill for that day. If you forget to take a pill for two days, use another method of child spacing for the rest of that month. However, you should also continue to take one pill a day until the packet is finished.

Explain to the woman that she may feel some changes in her body when she first starts taking the pills. She may have nausea and vomiting. She may gain weight or bleed slightly from the vagina. These changes will usually stop after a month or two.

If the woman has sudden and severe headaches, changes in her vision, chest pain, or swelling in her legs, she should come to the clinic immediately.

Follow-Up

Schedule a follow-up visit with the woman who is taking oral contraceptive pills. See her two days before she finishes the first packet of pills. At this visit, ask her to explain to you how she has been taking the pills. Make sure she is taking them correctly. If she has stopped taking them, ask her why and talk about it with her. Perhaps another method would be better for her.

Ask her about any changes in her body since she started taking the pills. Ask her the same medical history questions and look for the same abnormal physical signs that you checked before she began using the pills. If she is not having any serious problems, give her three packets of pills at a time.

If she has started to have a serious problem, she should stop taking the pills. Provide care for the new problem. Advise her of a safer, more appropriate child spacing method. Refer the woman to a doctor if she has any side effects that last more than two or three menstrual cycles. Refer the woman to a doctor immediately if she has any severe pain or swelling in the legs, bad headaches, or blurred vision.

Take a medical history and perform a physical examination, including a pelvic examination, every year for a woman using oral contraceptives. Look for any changes that mean she should stop taking the pills. Once again, ask her the same medical history questions and look for the same abnormal physical signs that you checked before

she began using the pills. It is your responsibility to make sure that a woman taking oral contraceptives is not risking her health.

If a woman wants to get pregnant again, she should stop taking the pills when she finishes a packet. She should be able to conceive within six to twelve months.

Advantages

With oral contraceptives, the couple has almost complete protection against unwanted pregnancy. Taking the pills helps regulate the woman's menstrual cycle. She will menstruate every twenty-eight days, there is usually a lighter menstrual flow, and there are few menstrual cramps or none at all. The couple can have sex at any time without taking additional precautions.

Disadvantages

Nausea is a common early side effect. The pill can cause blood clots to form in some women's legs. The pill causes an increase in blood pressure or even hypertension in some women. Some women who are taking the pill develop headaches which may be a sign of a serious disease. The pill, like pregnancy, can increase some women's blood sugar. The additional hormones in the body can change the normal environment of the woman's vagina. She may develop vaginitis and vaginal discharge. Vaginal bleeding or staining between times of menstruation may occur. Some women experience increased irritability or a tendency to feel depressed. Some women retain water in their bodies and thus gain weight. Some women's skin may darken.

Counseling Points

Make sure that the woman who is going to use oral contraceptives understands the risks. Advise her about the side effects and possible complications. Advise women that they need to take the pill every day, unless they are using a twenty-one pill packet and there is a seven day gap before starting the new pills. The pills may not be shared with other women. Ask the woman to repeat these instructions to you, so you can be sure she understands how to use the pills. Advise women to keep their pills out of the reach of children. Ask women who choose to use oral contraceptives to come see you again two days before they finish the first packet of pills. At this visit, a woman may be given three packets at a time if she is not having any serious problems.

REVIEW QUESTIONS

Oral Contraceptives

1. Briefly explain how oral contraceptives prevent conception.

2. Why is it important to take a medical history and perform a physical examination, including a pelvic examination, on a woman who intends to use oral contraceptives?

3. Oral contraceptives are the most reliable method of child spacing if used correctly. However, there are some side effects. Check the side effects that may be associated with the use of oral contraceptives.
 - ___ Blood clots
 - ___ Gangrene
 - ___ Pneumonia
 - ___ High blood pressure
 - ___ Changes in vision
 - ___ Heart disease
 - ___ Nausea and vomiting
 - ___ Insomnia
 - ___ Severe headaches
 - ___ Peptic ulcer
 - ___ Vaginal bleeding for more than one week
 - ___ Papules
 - ___ Breast cancer
 - ___ Liver disease
 - ___ Chest pain
 - ___ Flaky skin

- _____ Bronchial breath sounds
- _____ Cancer of the uterus or cervix

4. Put a check in front of the instructions that should be given to a woman who is beginning the pill.

- _____ Take one pill every day.
- _____ Take one pill every other day.
- _____ If you miss one day, do not worry. It will not matter.
- _____ You may expect some nausea when you first take the pill, but it will gradually disappear.

5. Describe what a follow-up visit for a woman on the pill should include.

6. Explain what you would tell a woman who is going to begin taking the pill for the first time.

7. In doing a physical examination on a woman you find that she has abnormally high blood pressure. What would you recommend to her with respect to a contraceptive method?

8. TRUE (T) or FALSE (F)

- _____ Oral contraceptives should not be given to women who are pregnant or lactating.

REVIEW EXERCISE

Oral Contraceptives

1. Fill in the information on your child spacing reference chart for oral contraceptives.

Unit 7

Permanent Methods of Contraception, Abortion, and Sterility

STUDENT GUIDE

OBJECTIVES

1. Describe the procedures for performing a vasectomy, tubectomy, mini-laparotomy, and laparoscopy.
2. Explain what an abortion is and how it is done.
3. Describe what is meant by sterility.
4. Demonstrate how to counsel individuals and couples about permanent methods of contraception, abortion, and sterility.

LEARNING ACTIVITIES

1. Listen to a student presentation on vasectomy, tubectomy, mini-laparotomy, and laparoscopy.
2. Listen to a student presentation on abortion and sterility.
3. Participate in class discussion.
4. In a small group, prepare and present a role-play to show how to counsel a person or a couple about one of this session's topics:

Vasectomy

Tubectomy

Mini-laparotomy

Laparoscopy

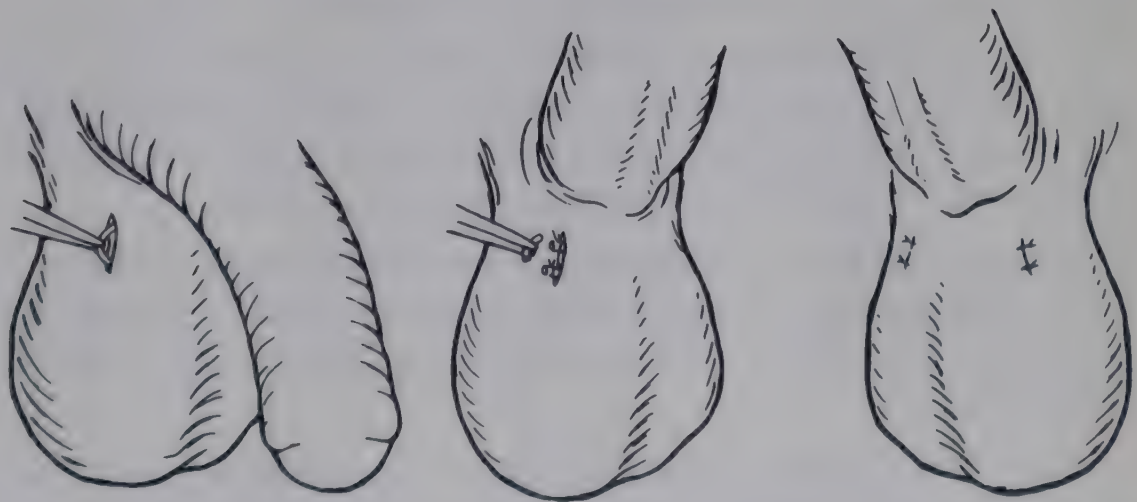
Abortion

Sterility

Permanent methods of preventing pregnancy are available to both men and women. A man can have a small operation called a vasectomy. A woman can have one of three small operations: a tubectomy, a mini-laparotomy, or a laparoscopy. A vasectomy prevents the man's sperm from passing out of his body. Each of the operations for a woman prevents the egg from reaching the uterus. After these operations, the man and woman can still have sex normally. These methods are permanent because they cannot be changed after they are done.

7.1 VASECTOMY

A doctor can do a vasectomy on a man in ten to fifteen minutes. The man can go home soon after the operation. The operation causes no problems for the man. He can enjoy intercourse as he did before the operation.



HOW A VASECTOMY IS DONE

In a vasectomy, the doctor makes small cuts on both sides of the scrotum. He locates the vas deferens and cuts out a small piece on the right and the left. He then ties off the cut ends of the vas deferens and closes the

cuts in the scrotum with stitches. If the stitches are made of cotton or silk, you or the doctor should remove them about one week after the operation.

Advantages

A vasectomy is a simple and quick operation that has no effect on the man's sexual desire or ability to have intercourse. After the operation, there is no need for any other method of contraception, except during the first several times the man has intercourse. The operation has few side effects. This is a permanent method. A man cannot have children after having a vasectomy.

Disadvantages

There are a few common side effects such as bruising of the scrotum, infection at the site of the operation, and perhaps some mild internal bleeding. These problems usually last for only a few days. If any serious bleeding or infection should occur, the man should be referred to a doctor.

Counseling Points

Some men or couples may wonder if a vasectomy can be reversed. That is, they may ask whether the cut vas deferens can be put back together so that fertility is restored. Reversing a vasectomy is difficult, time consuming, and not always successful. A man should be sure that he does not want any more children. He should know that a vasectomy is a permanent method of contraception.

Encourage the man to talk about any problems, fears, or concerns. Sometimes a man fears that a vasectomy will make him weak. This is not true. The man can have sex normally as he did before the vasectomy.

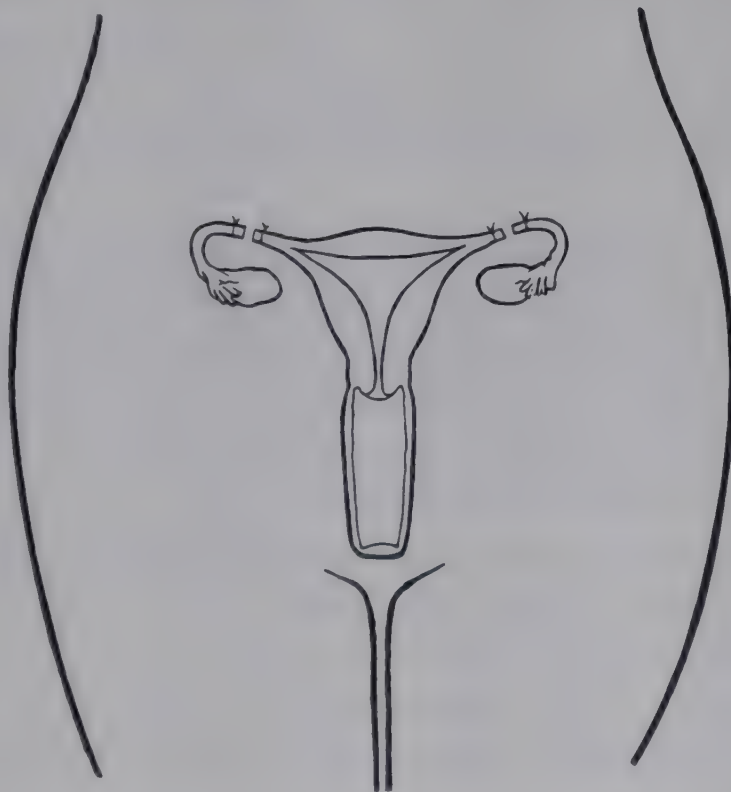
Emphasize that a vasectomy does not in any way affect a man's internal organs. He will continue to produce sperm. However, after the vasectomy, the sperm cannot travel as far as they did before the operation. So, they are absorbed into the man's body. The man will continue to have erections and ejaculate.

Advise a man having a vasectomy not to ride a bicycle or a horse for a week after the operation. Also, he should not do any heavy work for one week after the operation. The man should avoid intercourse

for one week after the operation. When he begins to have intercourse, he should use condoms for the first fifteen times. This is because he continues to have sperm in the semen that was stored above the cut in the vas deferens. After the first fifteen times, the man and woman can have intercourse without using any contraceptive devices.

7.2 TUBECTOMY

In a tubectomy, a doctor cuts a woman's abdomen to reach the fallopian tubes. He cuts and ties the tubes so that the egg from the ovary cannot join the sperm from the man. The doctor closes the cut in the abdomen with stitches. You or the doctor should remove the stitches from the abdomen in about seven days.



FALLOPIAN TUBES CUT AND TIED AFTER A TUBECTOMY

A woman can have a tubectomy at any time. The best time to do a tubectomy is one to three days after the woman has a baby because the uterus is still large and the tubes are easy to reach.

Advantages

After a tubectomy, no other contraceptive devices are needed at the time of intercourse. A tubectomy is a relatively easy operation. There are no major side effects from the operation. The woman can have normal sexual intercourse as she did before the operation. A tubectomy is a permanent method of contraception.

Disadvantages

There may be some minor side effects as a result of the operation such as bruising and soreness, slight bleeding, and possibly infection at the site of the cut. These problems can be treated and should go away after a few days.

Counseling Points

Some women or couples may wonder if a tubectomy can be reversed. That is, they may ask whether the fallopian tubes that were cut can be put back together so that fertility is restored. Reversing a tubectomy is difficult, time consuming, and not always successful. A woman should be sure that she does not want any more children. She should know that a tubectomy is a permanent method of contraception.

It is important to emphasize that a tubectomy does not in any way affect a woman's internal organs. Her ovaries will continue to produce eggs. However, after the operation, the egg cannot travel as far as it did before. So, it is absorbed into her body. She will continue to menstruate. A tubectomy does not have any effect on a woman's ability to enjoy intercourse.

Permanent methods of contraception should be discussed with all women over thirty-six years old. Older women have an increased risk of bearing an abnormal child. Women with a history of heart disease, diabetes, or active tuberculosis should not get pregnant. It would be best for their health if they would accept a permanent method of contraception.

Advise a woman having a tubectomy that she should do no heavy work for a week or two after the operation. She should also avoid intercourse for about two weeks, until the cut on her abdomen has healed.

7.3 MINI-LAPAROTOMY

A mini-laparotomy is a variation of the tubectomy. Only a small cut, 1.5 cm to 2.5 cm in length, is made in the midline of the abdomen. The tubes are cut and tied the same as in a tubectomy. The resulting abdominal scar is much smaller than in a tubectomy.

The advantages, disadvantages, and counseling points for a mini-laparotomy are the same as for a tubectomy.

7.4 LAPAROSCOPY

A laparoscopy is also a simple variation of the tubectomy. A doctor inserts a laparoscope, a long, thin metal tube, into the abdomen through a small cut in the abdomen. He looks through the laparoscope to find the fallopian tubes. Special forceps are used to close the tubes so that the eggs will not reach the uterus. A laparoscopy takes about fifteen to twenty minutes. The woman may return home to rest after the procedure.

The advantages, disadvantages, and counseling points for a laparoscopy are the same as for tubectomy.

7.5 ABORTION

Abortion is a procedure to stop a pregnancy, after the egg and sperm have joined together and are attached to the uterine wall. Experience has shown that an abortion that is done by a skilled doctor, under sanitary conditions and early in pregnancy, can be a safe and simple procedure.

How Abortion Is Done

Abortion is usually done by opening the cervix and removing the lining of the uterus. Suction also is used to remove the contents of the pregnant uterus. An abortion is safe only under sterile conditions by a well trained person. Abortion is safest when the woman is fewer than twelve weeks pregnant. Although an abortion can be done later using special techniques, the risks of bleeding and infection are considerably greater.

Advantages

An abortion terminates an unwanted pregnancy. Before twelve weeks of pregnancy, an abortion can be safe and simple.

Disadvantages

An abortion involves dilation of the cervix. It may cause some discomfort and side effects such as depression, infection, bleeding, and perforation of the uterus. Abortion can be expensive. The procedures are more difficult if the woman has been pregnant for more than twelve weeks.

Counseling Points

Advise a woman what will be done in the abortion procedure. Talk with her about available and appropriate child spacing methods. If the woman has several children, talk with her about a permanent method of contraception. A woman may come to you with problems resulting from a self-induced abortion or an abortion performed by an unskilled person. Listen to her problem, be sympathetic, and care for her. If necessary, refer her to a doctor.

7.6 STERILITY

Most of the information presented in this module deals with ways to prevent pregnancy. However, in your child spacing work you will also meet couples who want to have children but cannot. It will be your responsibility to help these people find out if they can increase their chances of having a child. Use your knowledge about human anatomy

and the natural cycles in the human body to help these people. Your knowledge about how to prevent pregnancy can be used to help people have the children they want.

A man or woman who is not able to help produce a child is said to be sterile. Sometimes the man or woman has a physical problem. A man may be sterile because his testes do not produce enough sperm cells, or his testes produce sperm cells that are not normal. This may happen after the man has an infection in his testes. The testes may not be in the normal position in the scrotum. A woman may be sterile because her ovaries do not produce eggs, or produce abnormal eggs. If the woman's fallopian tubes or uterus are abnormal, she may be sterile. Also, a woman becomes less fertile as she grows older. In other cases, a couple simply may not be having intercourse when the woman is most fertile, or in a way that increases the chances for conception.

When a couple comes to you saying that they have not been able to have a child, take a medical history and perform a physical examination for both the man and the woman. Listen to what they have to say. Show them that you are concerned about their problem. Explain to them that there is a certain time when conception can occur. Ask them about how often they have intercourse and whether the woman has a regular menstrual cycle. Make sure they understand how their bodies function in the reproductive process. You can encourage the woman to keep a record of her menstrual cycles. Show her that the most likely time for her to conceive is about fourteen days before her next menstrual period is due.

You can explain to the couple that there is only a short time during the woman's menstrual cycle when conception can occur. They should be sure to have intercourse on the days when the woman is most fertile. Explain that it is helpful if the man's penis is deep in the woman's vagina when he ejaculates. If the sperm are released near the cervical opening, there is a better chance that they will be able to reach the egg. You may mention that relaxing and not being overly concerned about their problem will help. If the woman has been using oral contraceptives or an IUD, reassure them that it usually takes a few months for fertility to return after stopping these methods.

Tell the couple that you are going to help them find out whether they have a physical problem or whether they are just not having intercourse at the best time or in the best way.

If they still have not conceived after several months of counseling and continued effort, refer them to a doctor for additional tests.

REVIEW QUESTIONS

Permanent Methods of Contraception, Abortion, and Sterility

1. Explain how a vasectomy prevents conception.
2. What should a woman be advised to do after she has a tubectomy?
3. What would you tell a man who is concerned that he would become weak after having a vasectomy?
4. How is an abortion done?
5. There are certain physical reasons why men and women are not able to produce a child. However, there are also other reasons. Explain these other reasons.
6. A couple comes to you and says that they would like to have another child but they cannot seem to do so. How would you approach this situation?

REVIEW EXERCISE
**Permanent Methods of Contraception,
Abortion, and Sterility**

1. Fill in the information on your child spacing reference chart for vasectomy, tubectomy, mini-laparotomy, and laparoscopy.

Unit 8

Clinical Child Spacing; Skill Development

STUDENT GUIDE

OBJECTIVES

1. Describe all of the child spacing methods discussed in this module, using your child spacing reference chart as a guide.
2. Take medical histories and perform physical examinations, including pelvic examinations, of women intending to use oral contraceptives or an IUD.
3. Identify abnormal physical conditions that would prevent a woman from using oral contraceptives or an IUD.

LEARNING ACTIVITIES

1. Join in a class review of all of the child spacing methods discussed in this module using your child spacing reference chart as a guide.
2. Join in an informal question and answer session with your instructor.
3. Take part in a day of supervised clinical practice in which you:
 - a. Take medical histories and perform physical examinations, including pelvic examinations, of women intending to use oral contraceptives or an IUD.
 - b. Identify abnormal physical conditions that would prevent a woman from using oral contraceptives or an IUD.
4. Take part in an additional week of skill development practice in a maternal and child health clinic to practice medical history taking and physical examinations in order to identify abnormal physical conditions that would prevent a woman from using oral contraceptives or an IUD.

Unit 9

Counseling Patients and Providing Clinical Child Spacing Services; Clinical Rotation

STUDENT GUIDE

ENTRY LEVEL

Before starting your clinical experience, you must have:

1. Passed a test of your knowledge about human reproduction, child spacing methods, communication skills, abortion, and sterility with a score of at least 80%.
2. Received at least two Satisfactory ratings on how you:
 - a. Take a medical history and perform a physical examination, including a pelvic examination, of a woman intending to use oral contraceptives or an IUD.
 - b. Identify abnormal physical conditions that would prevent a woman from using oral contraceptives or an IUD.
 - c. Counsel individuals and couples regarding human reproduction and child spacing, and provide them with a method that is available and appropriate for them to use.
 - d. Counsel individuals and couples who are concerned about abortion or sterility.

OBJECTIVES

When you have completed this unit, you should be able to:

1. Take medical histories and perform physical examinations, including pelvic examinations, of women intending to use oral contraceptives or an IUD.
2. Identify abnormal physical conditions that would prevent a woman from using oral contraceptives or an IUD.
3. Counsel individuals and couples about human reproduction and child spacing, and provide them with a method that is available and appropriate for them to use.

4. Counsel individuals and couples who are concerned about abortion or sterility.
5. Insert and remove an IUD.
6. Fit a woman for a diaphragm and teach her how to use and care for it.

LEARNING ACTIVITIES

You will provide clinical child spacing services, under supervision, for one month in a maternal and child health clinic or other site where child spacing services are normally provided.

During that time, your supervisor will help you identify and work with individuals and couples interested in child spacing. You will have the chance to practice the clinical child spacing skills that were introduced in class. You will be expected to use your text, your child spacing reference chart, and other guides necessary for you to provide clinical child spacing services.

EVALUATION Level II

Before the end of your one month clinical experience, you will need to be evaluated on your performance of all the skills listed in the objectives. Your supervisor will help you make arrangements for this, but you must also be ready to take some of the responsibility.

When you feel that you have had enough experience and have mastered a particular skill, ask your supervisor to evaluate you. He will use a log book to guide him during the evaluation. This log book contains a list of the child spacing skills you will practice during your clinical experience. It shows how many times you should be evaluated on a particular skill. Your supervisor will evaluate you only on those skills that are contained in the log. As he watches you perform the skill, your supervisor will write his rating in his log book. He will rate you in the following way for performance of clinical child spacing skills:

- 1 = Inadequate
- 2 = Needs Improvement
- 3 = Satisfactory
- 4 = Above Average
- 5 = Excellent

You will be expected to get at least a 3 rating on all of the skills.

Unit 10

Extending Clinical Child Spacing Services; Community Phase

STUDENT GUIDE

ENTRY LEVEL

Before you start your community experience, you must have:

1. Passed a test of your knowledge about child spacing.
2. Completed one month of clinical experience in a maternal and child health clinic or other site where child spacing services are normally provided.
3. Been rated at least Satisfactory on all of the clinical child spacing skills listed in the objectives for Units 8 and 9.

OBJECTIVES

When you have completed your community experience, you should be able to:

1. Provide clinical child spacing services to community members who want them.
2. Provide health education and counseling about human reproduction, child spacing, and child spacing methods.

LEARNING ACTIVITIES

Your community experience will last three months. During that time, in addition to providing clinical child spacing services, you should:

1. Identify any local customs that increase or decrease the use of child spacing methods.
2. Educate and counsel individuals, couples, and groups about human reproduction, child spacing, and child spacing methods.

EVALUATION Level III

During your community experience, your supervisor will evaluate you. To do this, he will use the standards set out in the log book.

The MEDEX Primary Health Care Series
University of Hawaii

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